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INTRODUCTION

SCOTSMAN MODEL SD1-J DRINK DISPENSER IS DESIGNED TO provide the utmost in flexibility to fit a particular users needs.

Hood top panels are seperated and removable to allow use of numerous syrup dispensing heads and accessories as required.

A seven circuit cold plate in the ice storage bin bottom allows use of five syrup flavors plus a cold sweet water and carbonated water circuit.

A complete carbonated water system comes built in, including carbonator pump and tank with connections thru cold plate.

There are no syrup lines (pre-cool) connected from the cabinet fittings to the cold plate nor post cooled lines from plate to fixture. These lines come with the Scotsman kits K-42S Satellite and K-41E Electric valve kit.

All connections for syrup, water, CO_2 gas, electrical, and drains are located on a common panel on the left rear corner of the cabinet back.

Note: Starting with serial Number LZ 310235 and up, all SD-1J Dispensers will be equipped with a Temprite carbonator tank and electrode.

DESCRIPTION

The SCOTSMAN AUTOMATIC DRINK DISPENSER is designed for drugstores, restaurants, cafeterias, ball parks, drive-ins, amusement parks, theatres — in fact, any place where crowds gather and seek ice cold, thirst quenching refreshments in a hurry. The continuous flow dispensers, together with the concealed SCOTSMAN crushed ice maker, is designed for the peak periods of traffic.

ATTRACTIVE COMPACT CABINET

Dark grey finish anodized aluminum trim, up-to-date-styling, and removable panels for easy access to mechanical parts. Hood assembly of stainless steel attractively designed for front or back counter installation.

SEALED REFRIGERATION SYSTEM

To provide quiet, efficient operation of the machine, the compressor motor is internally spring mounted, the carbonator pump is rubber mounted and the freezer has a direct-drive gear motor.

SELF-CONTAINED STORAGE BIN

Stores its own ice supply in a heavily insulated, stainless steel storage bin with handy access door opening in hood-counter.

STANDARD OVER-ALL DIMENSIONS

Allows automatic drink dispenser to be installed in harmony with existing counter equipment.

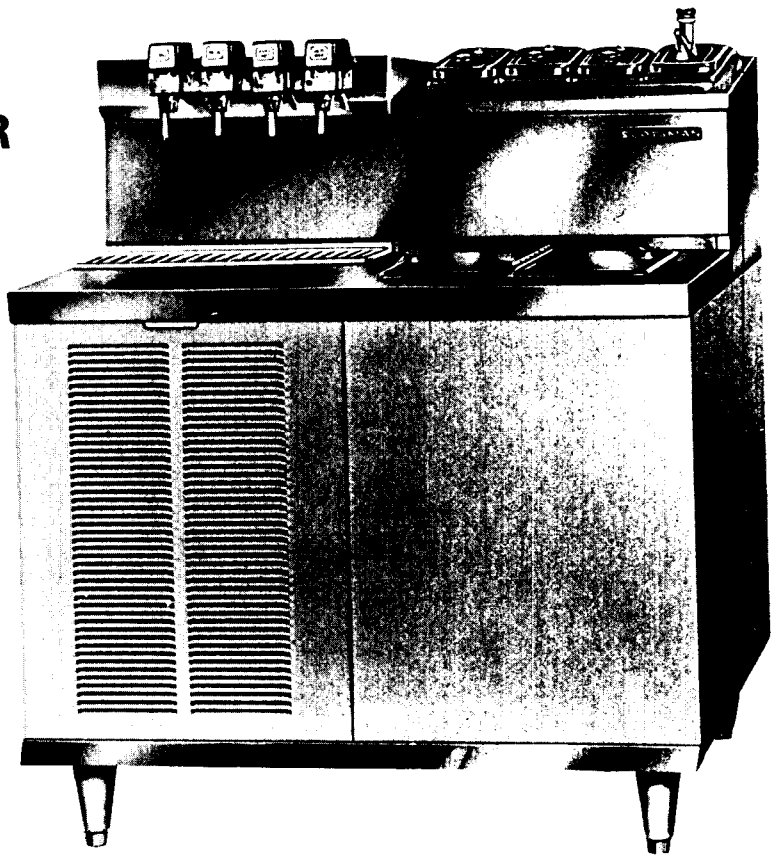
HOW IT WORKS

The unit is completely automatic; water is circulated through a self-contained carbonator which guarantees a ready, abundant supply of perfect carbonated water at all times. Maximum cooling of sweet water, carbonated water and syrups is accomplished by the large capacity cold plate. All modern dispensing heads allow the mixture of a set amount of syrup and carbonated water. A manual switch starts the ice machine and from then on ice is produced automatically in small uniform pieces. When the storage bin fills, a bin thermostat automatically shuts the machine off and causes it to start up again when the ice is removed from the storage bin.

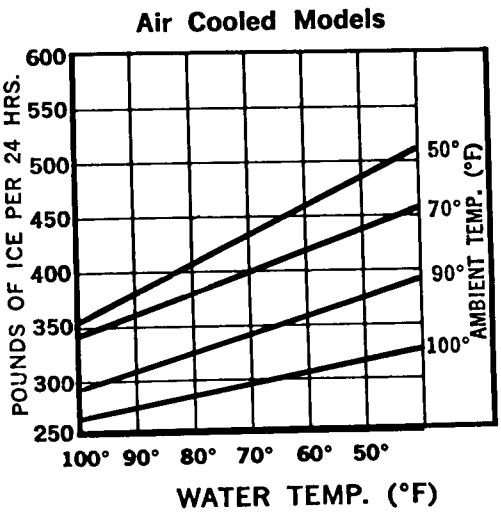
SCOTSMAN®

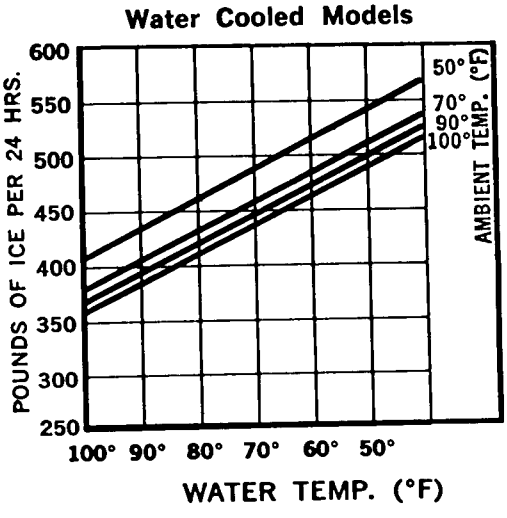
DRINK DISPENSER ICE MACHINE

SD - 1J series



ice making capacity





SPECIFICATIONS

COMBINATION ICE MACHINE AND DRINK DISPENSER	MODEL SD-IJ	MODEL SD-IWJ	MODEL SD-IJ-SS	MODEL SD-IWJ-SS
CONDENSER, Air Cooled	X		X	
CONDENSER, Water Cooled		X		X
CONDENSER WATER INLET 3/8" SAE Flare		X		X
CONDENSER WATER OUTLET 3/8" SAE Flare		X		X
FINISH, Hammerloid Grey	X	X		
FINISH, Stainless Steel			X	X
SHIPPING WEIGHT	464	464	464	464

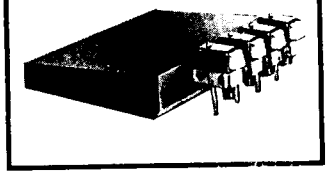
DAILY CAPACITY up to 430 lb. (Air Cooled)
up to 500 lb. (Water Cooled)
STORAGE BIN CAPACITY (Self Contained) 200 lbs.
COMPRESSOR 1/2 H.P.
EVAPORATOR DRIVE MOTOR 1/10 H.P.
CARBONATOR SYSTEM 1/4 H.P.
ELECTRICAL 115 V, 60 CY, 1 PH, AC
CO 2 INLET 1/4" SAE Flare

WATER INLET 3/8" SAE Flare
*SUMP & DRIP DRAIN 5/8" O.D. Tube
* BIN DRAIN 5/8" O.D.
STORAGE BIN, Stainless steel
HEIGHT (With legs) 45 1/2" to 46 1/4"
HEIGHT (Without legs) 39 1/2"
WIDTH 40"
DEPTH 31"

*(Plastic tube accepts size shown O.D. tube)

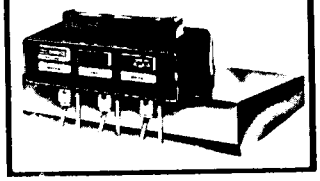
"A" ACCESSORY KITS

K-41E



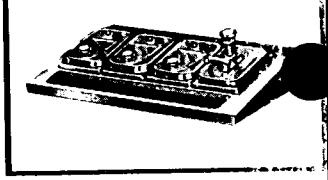
Electric valve unit: dispenses four flavors plus carbonated and plain water. Prefabricated hose assembly speeds internal connections. Easily installed by removing top panel at left of machine, and setting unit over the opening.

K-42S

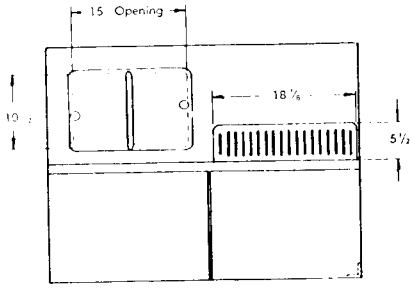


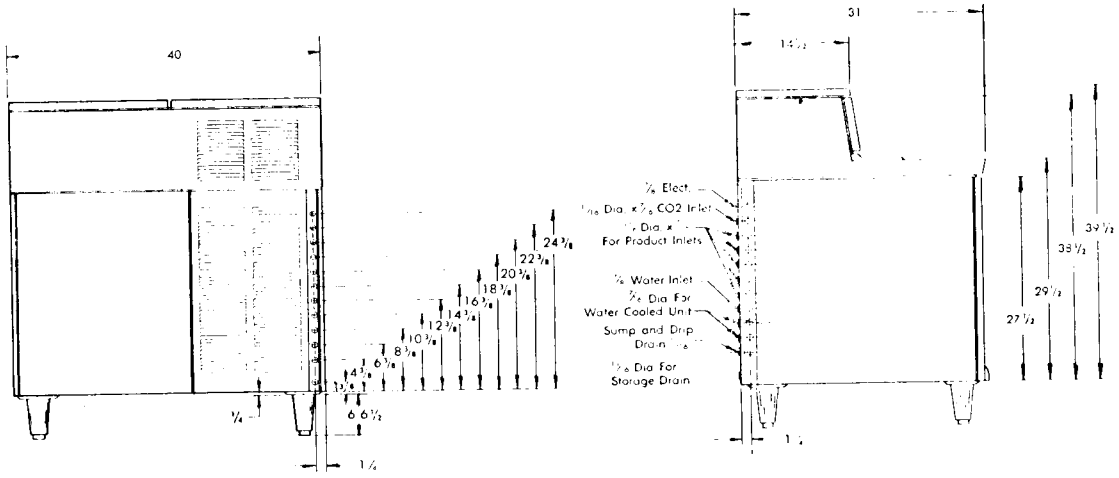
"Satellite" postmix head base: provides mounting surface and prefabricated hose assembly for easy installation of this popular remote postmix dispensing head. Replaces top panel at left of machine. Head not included.

K-43R



Syrup rail kit: holds four jars, replaces top panel at right of machine. Chilled air from ice bin provides refrigeration. Jars not included — openings accept 4 1/16 x 6 3/4" jars with depths of 6 9/16" or 9 1/16". Maximum of two 9 1/16" jars may be used.





Specifications subject to change without notice.

DRINK DISPENSER
General Specification

	SD-1J	SD-1WJ
Compressor	1/2 HP Copelaweld	Same
Condenser	Air Cooled	Water Cooled
Refrigerant	26 oz. R 12	24 oz. R 12
Refrigerant Control	Capillary Tube	Same
Power Consumption – Compressor	11.0 Amps.	Same
Power Consumption – Gear Motor	4.0 Amps.	Same
Total Power Consumption	16.1 Amps.	14.3 Amps.
Current	115 V. 60 cycle, 1 Ph.	Same
Gear Motor Drive	1/10 HP	Same
Worm – R. P. M.	10.5	Same
Water Consumption – Freezer	2.5 Gallons per hour	Same
Water Consumption – Condenser		Varies from .75 to 2 G. P. M.

PLUMBING AND CO_2

Water Inlet (all Models)	3/8" Flare
Water Inlet – Condenser (W.C. models)	3/8" Flare
Drain Overflow	5/8" O. D. Copper
Drain – Storage	5/8" O. D. Copper
Drain Condenser (W. C. models)	3/8" O. D. Copper
CO_2 Connections	1/4" Flare
CO_2 Line Size Recommended	1/4" to 10' run

CARBONATOR SECTION

Motor	1/4 H. P.
Pump – Procon	100 gph
Switch – Pump Up	Electrodes in Tank
Voltage Characteristics	115, 60, 1
Cold Plate	18-3/4" x 26-3/8"
Control – Pump Up	Solid State Liquid Level Control
Carbonator Tank	Temprite

DISPENSER SECTION

Order and use conversion kits as follows:

K41-E	Electric Valve Kit
K42-S	Satellite Head Kit
K43-R	Syrup Rail Kit

See manual section, Factory Conversion Kits, Accessories for Installations procedures.

INSTALLATION

UNCRATING DRINK DISPENSER

The entire unit, less conversion kits, comes in one crate. Upon delivery a visual inspection of the crate should be made and any severe damage noted should be reported to the delivering carrier and a concealed damage claim filed subject to internal inspection with carrier representative present. Remove crate by pulling nails driven through sides of crate into the bottom skid. A nail puller is best suited here. Next remove (4) four bolts from underside of skid which connect to complete unit base. Unit now free from all crating.

PREPARATION FOR INSTALLATION

Remove all service and access panels from unit cabinetry-leg package is wired to inner machinery compartment, remove and install (4) four legs.

Next remove all packing tapes or wires in machinery compartment.

Next select proper drink dispenser conversion kit or kits and install same per instructions in kit. Also refer to this manual section "Factory Conversion Kits".

LOCATION

Select the location before delivering the unit to the job. The following points should be considered.

1. Convenience-Place the unit where it is practical to give efficient use. It can be located either in a back bar or in a front bar. It is designed to fit into a standard soda fountain line-up or it can be used as an individual counter unit. Keep in mind that the dispenser can serve a double function of providing crushed ice as well as carbonated beverages.

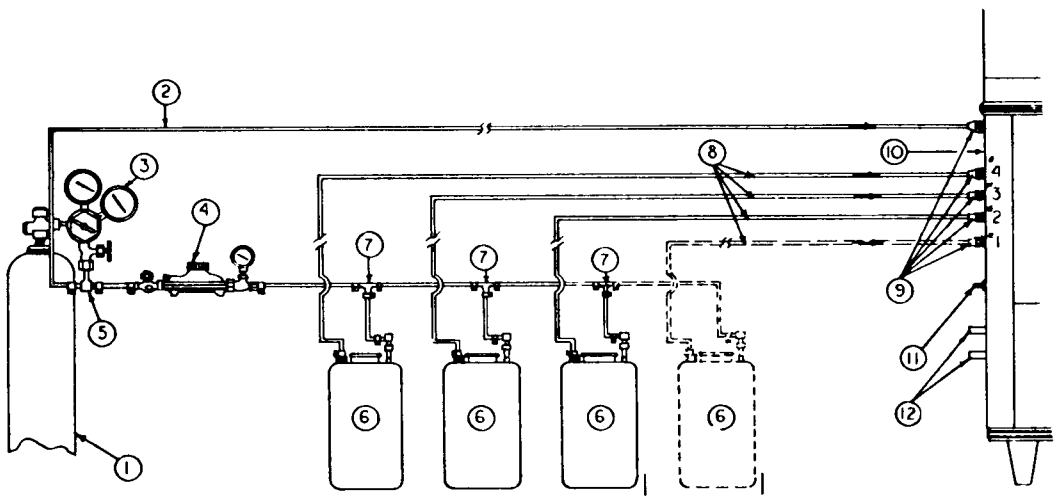
2. Servicing Unit—Bearing in mind that all service connections are made at the left back corner provisions for adequate access space must be considered here. Also on air cooled models, cooling air is drawn in through the rear louvered back and hood panels and exhausted through the louvered front panel, therefore a minimum 6" air gap must be maintained for proper condensing unit operation.

3. On air cooled models, condenser is directly behind front service door to facilitate regular cleaning schedules, advise user to clean frequently.

4. Avoid installations where temperature extremes can be experienced. Scotsman does not recommend installation below 50° Fahrenheit nor above 100° Fahrenheit.

TYPICAL POST MIX CARBONATED BEVERAGE SYSTEM

APPLICABLE TO THE SD-1J



CODE

1. CO_2 CYLINDER
2. CO_2 LINE (COPPER, STAINLESS STEEL OR PLASTIC)
3. HIGH PRESSURE CO_2 REGULATOR FOR CARBONATOR
4. LOW PRESSURE CO_2 REGULATOR FOR SYRUP TANKS
5. BRANCH TEE
6. SYRUP TANKS
7. TEE
8. PRODUCT LINES (STAINLESS STEEL OR PLASTIC)
9. 1/4 S.A.E. FLARE FITTING
10. ELECTRICAL INLET
11. WATER INLET 3/8 SAE FLARE PITTING
12. DRAINS

NOTE:

Items shown are not sold by Scotsman.

Recommended Source:

Excellall Products Division
The Bastian-Blessing Co.
4201 W. Peterson Co.
Chicago, Illinois

INSTALLATION

Be certain the SCOTSMAN DISPENSER is on its own circuit and individually fused. Seperate switches are located in the front of the dispenser allowing the dispensing equipment and the ice machine to operate independently of each other. All internal wiring is completed.

All external wiring should conform to National Underwriters and local electrical code requirements. An electrical permit and the services of a licensed electrician will usually be required. See wiring diagram for proper hook-up.

PLUMBING–AIR COOLED MODELS

The recommended water supply line is 3/8" O'D' tubing for SD-1. A 3/8" flare fitting is provided on the machine for water inlet. Connect to cold water supply line using a shut-off valve installed in an accessible place between supply and machine.

A wire mesh strainer is provided on the pump inlet connections as a protection against large particles of rust, scale, ets., which may be loosened in the water pipe at time of installation. This strainer will not prevent fine particles from damaging the pump, therefore, a good filter is recommended in any installation and is absolutely essential when the water supply contains solids. Maximum water supply pressure must be at least 20 lbs. below operating CO_2 pressure. If supply pressure exceeds this, carbonator may flood. Install a water pressure regulator in the water supply line and adjust as required.

PLUMBING–WATER COOLED MODELS

On water cooled models a seperate connection to the condensing unit will be required. A 3/8" flare fitting is provided on the machine for water inlet, a 3/8" O.D. Copper drain line is provided. Water supply must be installed to conform with local plumbing codes. In some cases a licensed plumber and/or a plumbing permit will be required.

All drains are gravity types and must be pitched 1/4" fall per foot of horizontal run. All drains to be installed per local and state codes. Drain receptacle should be of open, trapped or vented construction. Storage bin drain is 5/8" O.D. Copper tubing and should be vented and run seperately.

ELECTRICAL

Rating SD-1-J
115 volts 16.1 Amps.
60 cycle, single phase
20 amp Maximum Fuse
Use No. 12 wire for runs under 50 feet.

START–UP

When the machine is placed and conversion kits added as per instructions and all plumbing and electrical connections are completed and tested, turn on the water supply. Be sure the float cover is removed to check on the float operation and water level in the water reservoir. Be sure water reservoir is filled before starting ice machine. Water level should be 1/4 inch below the reservoir overflow pipe.

Connect CO_2 cylinder, CO_2 Hi-Lo pressure regulator and syrup tanks to proper fitting on cabinet rear panel.

Slowly open CO_2 cylinder and set both CO_2 regulators to 30 lbs. guage reading.

Check all syrup lines, fitting to cold plate, dispensing head connections etc. with bubble soap and correct any leaks found.

Check all internal water connections for leaks. Start carbonator by turning on top switch.

Install gauges and check refrigerant pressures at the time of start-up. Flare connections can work loose during shipment. Add refrigerant as required – see ice machine section. Turn on ice machine switch in front of cabinet and machine is in automatic operation. In two or three minutes ice will start dropping off worm shaft and out the ice chute. Let the machine operate for at least 30 minutes or until ice covers the bottom plate. Check for any excess noise in carbonator or ice machine.

Test the ice storage control bulb by holding a handful of ice around the bulb until the machine shuts off. One minute should be normal for the control to function. Within minutes after the ice is removed, the bulb will warm up and machine will automatically start up. The control is factory set and should not be reset until this test is made. Normal setting of this control chould be approximately 35 degrees cut-out and 45 degrees cut-in to prevent short cycling.

Check hand reset low pressure control setting. This safety device should normally be set 10 p s i below normal suction pressure to prevent cutting off when the compressor first starts up and still provide safety in case of interruption in water supply, shortage of refrigerant, low ambient or any other cause of abnormal low suction pressures.

Adjust dispenser heads to give correct proportions of syrup and carbonated water. See instructions provided with dispenser.

Explain the machine to the owner, showing him how the machine works and go over the owner's operating instructions. Answer all the owner's questions about the machine, and do not leave with any doubt in the owner's mind about the machine, how to operate it or where to reach the service man in case of need. Call back the next day to check the machine again and answer any other questions the owner may have.

ICE MACHINE SECTION

HOW IT WORKS

Water enters at the cabinet fitting, passes through the strainer at the pump and then goes to the water reservoir. The function of the reservoir is to maintain a constant water level inside the freezer. Water from the reservoir enters the freezer at the bottom and is frozen inside the freezer. A stainless steel auger inside the freezer carries the ice upward where it is extruded passed the Ice-breaker into the storage bin.

The auger is rotated by a direct drive gear motor.

A manual switch starts the machine and from then on Ice is produced automatically in small uniform pieces. When the storage bin fills a thermostat shuts off the machine and causes it to start up again when ice is taken from the storage bin. The Ice Machine Section operates independent of the carbonator and dispensing section although it is built into the same cabinet.

ELECTRICAL SYSTEM: The super Flaker Model SD-1J is designed to work on standard electrical supply 115 volts, 60 cycle single phase.

Supply voltage should not vary more than plus or minus 10 percent over nameplate rating.

Special voltage requirements are available on special order. Therefore, always check nameplate for this information before connecting electrical supply.

The electrical circuit consists of condensing unit, freezer gear motor, storage bin thermostat ON and OFF switch and spout micro (safety) switch.

A.CONDENSING UNIT: The starting capacitor and starting relay are housed and fastened to the motor compressor.

B.GEAR MOTOR TO FREEZER: Models SD-1J are equipped with a 1/10 horsepower direct drive gearmotor. A speed sensing switch mounted on top of the motor of the gear unit will open and stop the compressor when the RPM of the gearmotor is less than 900. At 1200 RPM it will close, starting the compressor.

In an actual operation any condition that may cause excessively hard ice and overloads within the freezer assembly, water intteruptions, cold ambients, etc. is transmitted to the gearmotor reducing it's speed. When gearmotor slows down to approximately 900 RPM the speed sensing switch opens the electrical circuit to the compressor. The compressor stops and no more ice is produced, meanwhile the gearmotor continues to run, clearing the overload condition and gradually resumes full speed. At 1200 RPM gearmotor speed sensing switch closes compressor circuit causing the normal icemaking process to begin once more.

Any freeze up possibility is thereby automatically cleared out by the gearmotor.

C.STORAGE BIN THERMOSTAT: Thermostat control body is located in electrical control box. The thermostat sensing tube is threaded into the ice storage bin where it automatically stops the icemaker when ice bin fills to sensing tube level and restarts icemaker when ice is removed. Factory settings are 35° cut out, 45° cut in.

Altitude correction begins at 2,000 feet, cut in and cut out screws should be adjusted equally, not more than 1/4 turn at a time.

D'MICRO SAFETY SWITCH: The micro switch is located in the top of the ice chute. The switch is operated by a pressure plate inside the ice chute. Ice backs up in the chute if the storage bin thermostat fails. Micro switch will shut off the condensing unit only, when operated.

E.ON-OFF SWITCH: A manual on-off switch is located in control box.

F.SAFETY CONTROL: High head pressure. On water cooled models only. Factory set to stop entire icemaker if head pressure reaches 190 lb. PSIG. Manual reset, adjustable.

G.SAFETY CONTROL: Low back pressure. Used on both models, this control is set to electrically "open at 2 lbs PSIG, stopping entire icemaker. manual reset, non adjustable.

NORMAL OPERATING PRESSURES

Check refrigerant pressure settings after 30 minutes of initail start up. Attach gauges to proper fitting on compressor service valves.

On water cooled models correct head pressure is 135 p s i. Adjust water regulating valve to maintain this reading.

On air cooled models, head pressure will vary slightly depending upon ambient air, however, normal reading is 130 p s i.

Suction pressure should be 15 p s i with proper refrigerant charge, frost line will extend about 8 inches out of accumulator. Suction pressure will vary approximately 2 p s i either way depending upon ambient and incoming water supply temperatures to freezer.

ICE MACHINE SECTION

REFRIGERANT CHARGE

The below refrigerant charge is approximate. When charging, set at 135 p s i head pressure and charge so that the frost line extends out of the accumulator after fifteen minutes of operation. Frost out of accumulator at least 8 inches and preferable 1/2 way to the compressor for best capacity and performance.

MODEL	REFRIGERANT	CHARGE
SD-1 air	26 oz.	R-12
SD-1 water	24 oz.	R-12

WATER SYSTEM

A water level is maintained in the water reservoir by a float operated valve. Water is piped from the water reservoir to the freezing chamber by a gravity feed line maintaining an equal water level. An overflow is installed in the water reservoir should the inlet water valve fail.

The water reservoir is equipped with a 2 inch air gap to prevent back siphoning and meet all health codes.

The water level in the water reservoir is adjusted by bending float ball arm. The water level should be set 1/4 inch below the overflow pipe. A condensate drip pan is connected to the drain circuit to automatically dispose of condensate moisture.

SERVICE ANALYSIS

ICE MACHINE SECTION

COMPLAINT	POSSIBLE CAUSE	CORRECTION
Water Leaks	Defective water seal.	Replace
	Gravity feed line leaking.	Check hose clamps.
	Water level in reservoir too high	Adjust water level to 1/4" below reservoir overflow, then raise reservoir until water comes out freezer spout, then lower reservoir 3/4".
	Storage bin drain and connecting fittings.	Check and repair.
Excessive noise or chattering.	Mineral or scale deposit on auger and inner freezing chamber walls	For severe deposits, remove and manually polish auger, sand inner chamber walls of freezer barrel.
		For lighter concentration, use Scotsman Ice Machine Cleaner periodically.
	Intermittent waters supply.	Check and clean water strainer.
		Check gravity feed line for air lock.
		Remove air lock.
	Water level in reservoir too low.	See "Corrections" under "Complaint" water leaks.
	Gear Reducer loose on frame	Tighten.
	Motor compressor not solid on rubber mounts.	Repair or replace rubber mounts
	Gear motor end-play or worn bearings	Repair or replace
Making wet ice	Surrounding air temperature too high.	Correct or move unit.
	Under or over-charge of refrigerant.	Recharge with proper amount. Should frost out of accumulator at least 8". See nameplate for correct charge. See "Corrections" under "Complaint" water leaks
	Back pressure too high	Overcharge of refrigerant, faculty compressor or high head pressure. Lower as indicated.
	Faulty compressor or valve plate.	Repair or replace.

SERVICE ANALYSIS

ICE MACHINE SECTION

COMPLAINT	POSSIBLE CAUSE	CORRECTION
Low ice production.	Loss of refrigerant. Under or overcharge or refrigerant.	Check and recharge. See nameplate for correct charge.
	Drive motor weak.	Replace.
	Dirty or plugged condenser.	Clean condenser.
	Low water level in water reservoir.	See "Corrections" under "Complaint" water leaks.
	Partial restriction in capillary tube or drier.	Moisture in system. Overcharge of oil in system. Remove charge by blowing back through cap tube. Replace drier and recharge.
	Inlet water strainer partially plugged.	Remove screen and clean.
	Corroded or stained worm shaft due to water condition.	Remove worm shaft and clean, or use Scotsman Ice Machine Cleaner. See Maintenance Section.
Gear motor noise.	Low on oil.	Remove case cover to check for proper oil level. Top of gears should be covered. Use: Sun Oil Company Prestige 50-EP
Unit will not run.	Blown fuse in line	Replace fuse and check for cause of blown fuse.
	Bin thermostat set too high.	Adjust thermostat. Set at 35° cut-out, 45° cut-in.
	Loose electrical connection.	Check wiring.
	Switch in "OFF" position.	Turn switch "ON".
	Inoperative master switch.	Replace switch or thermal overload.
	Off on munual-reset low pressure control.	Reset.
Machine continues to run with full storage bin	Bin thermostat not properly set or is defective.	Re-set or replace. Re-set to 35° cut-out, 45° cut-in.

SERVICE ANALYSIS

ICE MACHINE SECTION

COMPLAINT	POSSIBLE CAUSE	CORRECTION
Compressor cycles intermittently.	Low voltage.	Check for overloading.
	Dirty condenser	Clean
	Air circulation blocked.	Remove cause or move unit.
	Inoperative condenser fan motor.	Replace.
	Non-condensable gases in system.	Check for leaks, evacuate and recharge.
	Bin thermostat differential too small causing short cycling.	Widen differential 35° cut-out, 45° cut-in.
	Cycling on ice chute microswitch.	Set or replace bin thermostat.
Machine runs but makes no ice.	Loss or undercharge of refrigerant.	Check for leaks and recharge. See nameplate for correct charge.
	Water not entering freezing chamber.	Plugged strainer or supply line. Check and clean. Air lock in gravity feed line. Check and remove air lock.
	Moisture in system.	Check, evacuate, replace drier. Recharge. See nameplate for correct charge.
	Water seal leaking	Replace seal.
	Water turned off while unit was operating.	Freezer inlet water line froze shut. Unit must be turned off and defrosted.
	Drive gear motor or drive coupling stripped.	Repair or replace.

CLEANING INSTRUCTIONS

1. Set ice machine and dispensing switch to OFF.
2. Remove all ice from storage bin.
3. Turn OFF water supply or block float.
4. Set ice machine switch to ON and pour cleaning solution into reservoir. DO NOT fill above overflow tube; use 6 oz. of Scotsman Cleaner and 1-1/2 qt. hot water.
5. Continue to make ice on solution until the solution is used up and reservoir has only about 1 inch solution remaining. DO NOT allow unit to operate with empty reservoir.
6. Set ice machine switch to OFF, wash and rinse reservoir, turn water ON or remove float block.
7. Set ice machine switch to ON. Let unit run for at least 15 minutes to flush out any cleaning solution. Check ice for acid taste -- run until ice tastes sweet.
8. Set ice machine switch to OFF. Add hot water to ice bin. Using this melt water, thoroughly wash and rinse all surfaces within the storage bin.
9. Parts removed from storage bin, splash grill, etc., clean in accordance with local Health Department regulation.
10. Pour hot water into drip pan each day to keep drains open.
11. Clean dispensing equipment in accordance with manufacturer's recommendations. This should be explained in Owner's Manual or Installation Instructions provided with dispensing equipment. If cleaning instructions are not available, then follow procedure below.
12. Check faucet nozzle parts, these usually snap or screw off. These parts should be cleaned and sanitized each day.
13. Dispensers having ice compartments should be cleaned and sanitized each week. Syrup lines and tank should be drained and then sanitized twice each month.

MAINTENANCE INSTRUCTIONS

THE FOLLOWING MAINTENANCE SHOULD BE ACCOMPLISHED TWO TIMES PER YEAR ON ALL SCOTSMAN DRINK DISPENSERS'

1. Check and clean water strainers and float valve. Depress float valve to insure full stream of water.

2. Check water level and machine level. Keep water level below overflow, but as high as possible and still not run out of spout opening with machine off. Water should come out of spout with ice at all times. Adjust as required.

3. Clean reservoir and interior of freezer assembly using SCOTSMAN Ice Machine Cleaner in accordance to instructions provided.

NOTE: Cleaning requirements vary according to local water conditions. Visual inspection of the auger before and after cleaning will indicate best procedure to be followed in local areas.

4. Check high and low side pressures. On air-cooled models head pressures range between 130 and 145 PSI. Suction pressure should be above 12 PSI and will range up to 16 PSI depending upon water and ambient temperatures.

5. Check gearmotor operation. Normal running temperatures are in the area of 160° farenheit, which is hot to the touch. Check operation of centrifugal switch and the micro switch it actuates. When micro switch is actuated, compressor stops, gearmotor continues to run.

6. Check top bearing of freezing tube. Remove retainer ring around edge of stamped brass cap. If moisture is around bearing, wipe up and remove grease. Add new grease. Use Beacon No. 325. Replace cap and retainer ring.

7. Clean air-cooled condenser. Inform customer to clean frequently. Always shut off machine when cleaning.

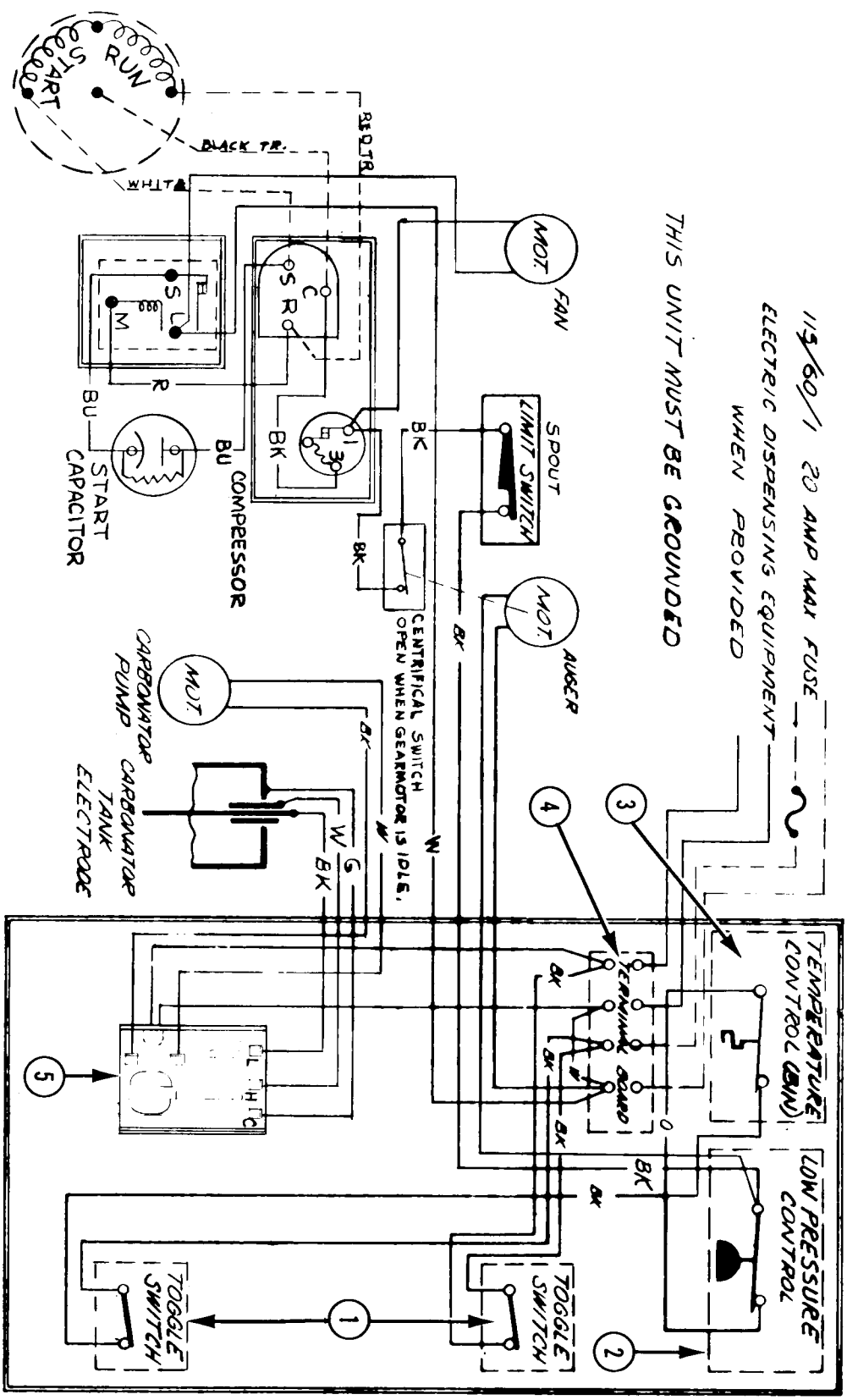
8. Oil condenser fan motor when possible.

9. Check for refrigerant leaks and proper frost line. Should frost out of accumulator at least one-half way to compressor, and in some areas back to service valve.

10. Check for water leaks. Tighten drain line connections. Run water down bin drain line to make sure it is open.

11. Check quality of ice. Ice should be wet when formed, but will cure rapidly to normal hardness in bin.

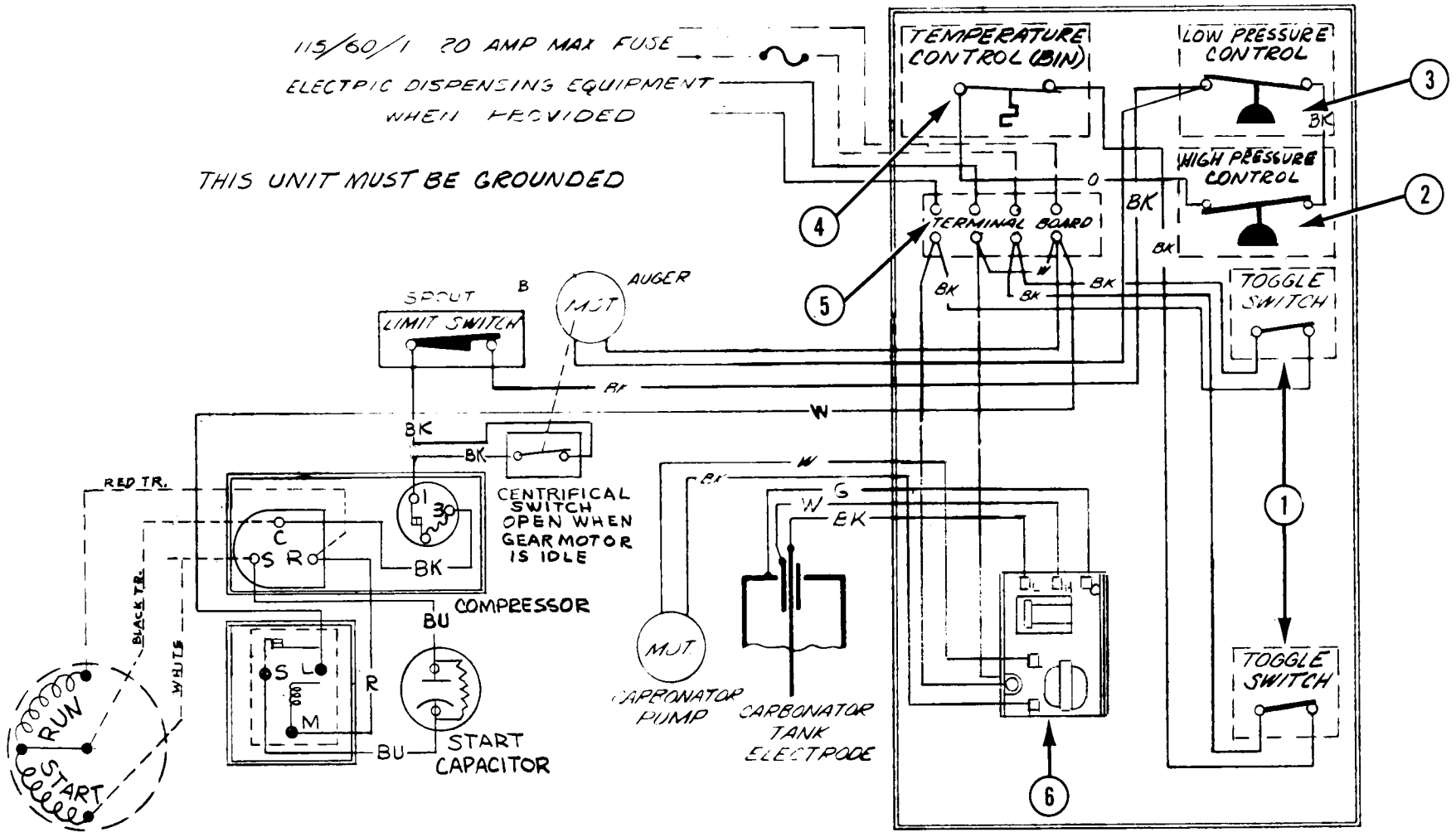
12. Check thermostat and pressure plate cut off in spout. Micro switch cuts off only compressor. Bin thermostat should be set at 10° differential and should keep entire machine off at least twenty minutes in high ambients (longer in low) during normal operation. Settings are 35° cut out, 45° cut in.



WIRING DIAGRAM

SD - 1 J AIR COOLED

Item No.	Part No.	Name
1.	12-426-1	Toggle Switch
2.	11-358	Lo Pressure Control
3.	11-354	Bin Thermostat
4.	12-813-1	Terminal Board
5.	11-373-1	Water Level Control

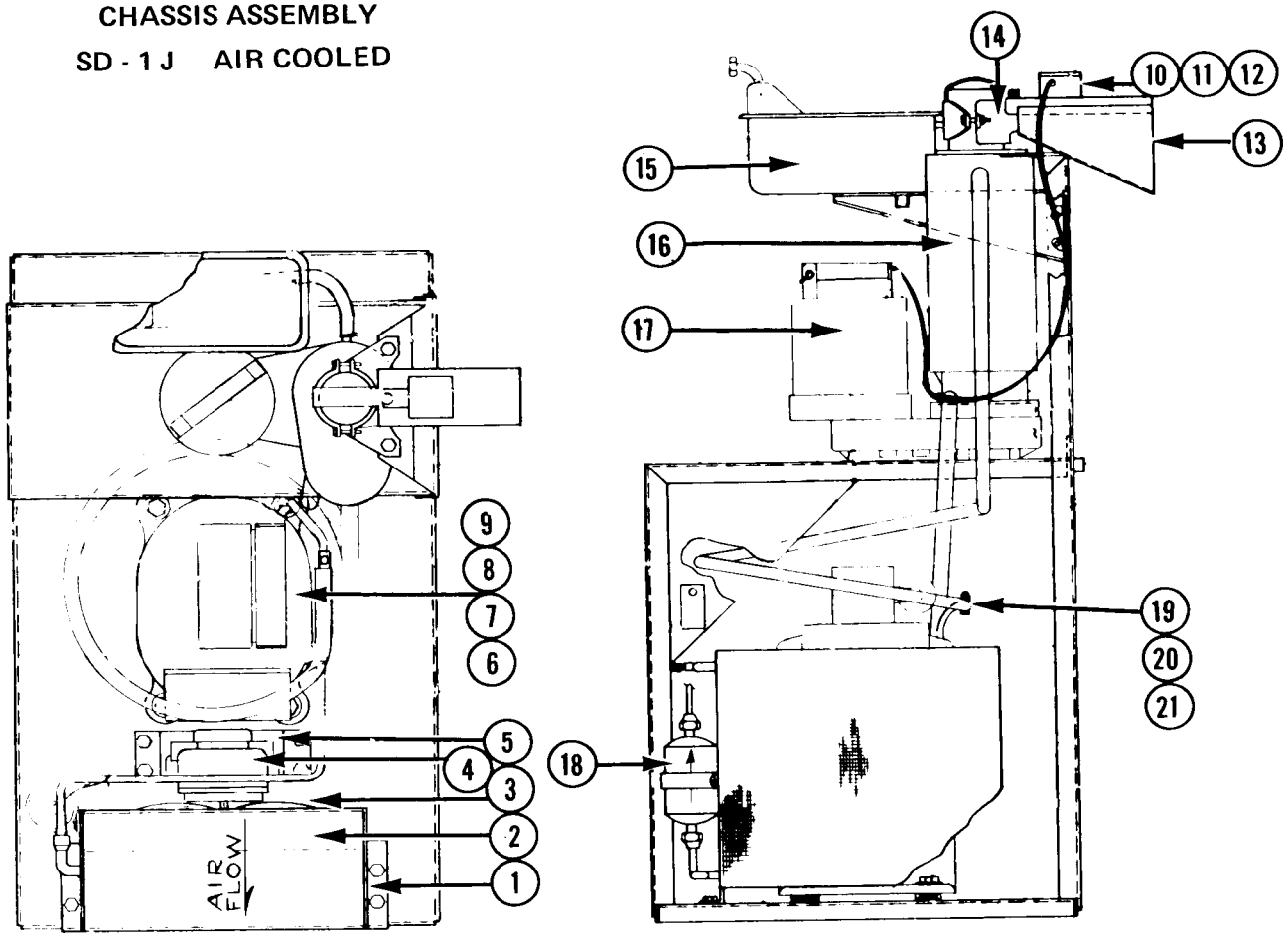


WIRING DIAGRAM

SD - 1 WJ WATER COOLED

Item No.	Part No.	Name
1.	12-426-1	Toggle Switch
2.	11-357	High Pressure Control
3.	11-358	Low pressure Control
4.	11-354	Bin Thermostat
5.	12-813-1	Terminal Board
6.	11-373-1	Water Level Control

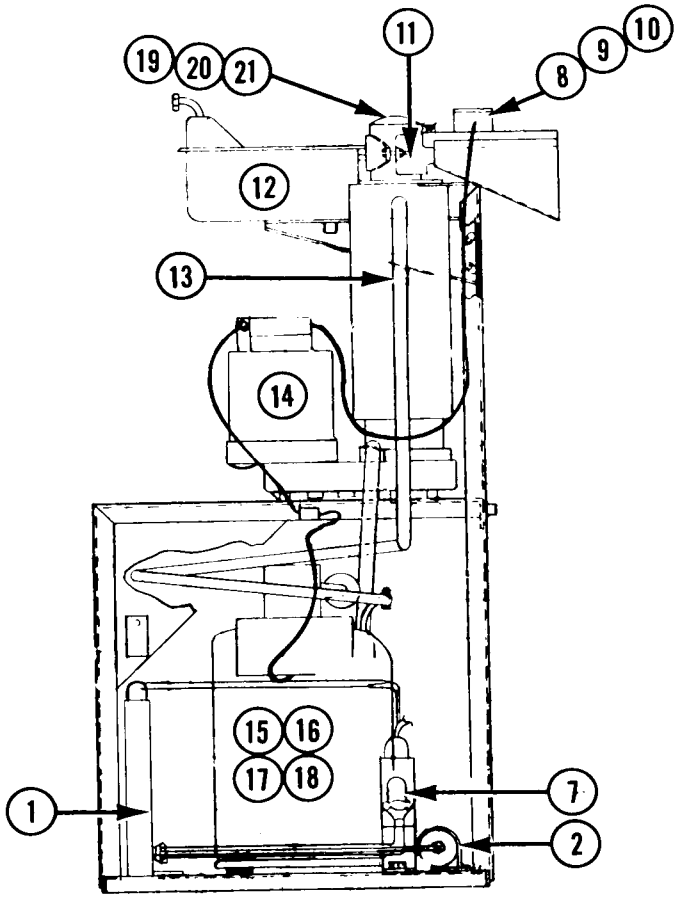
CHASSIS ASSEMBLY
SD - 1 J AIR COOLED

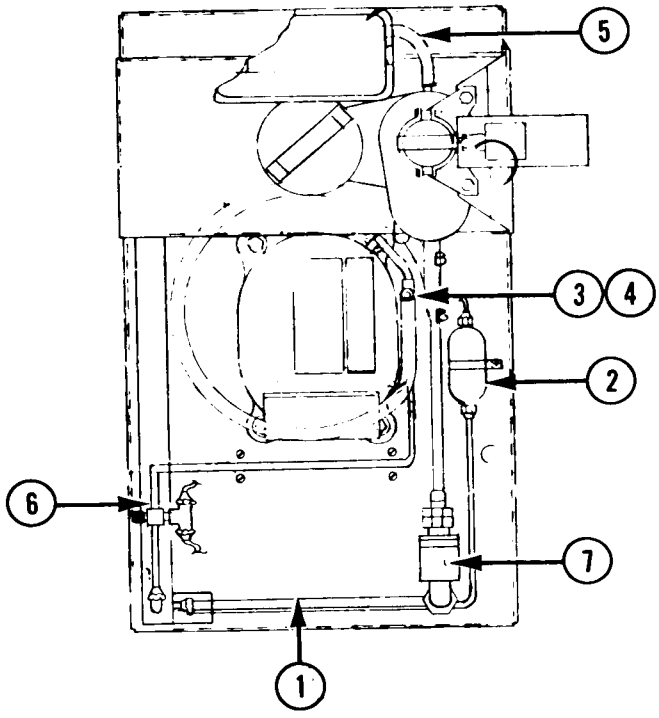


Item No.	Part No.	Description
1.	18-234	Condenser (Air Cooled)
2.	A-18229	Fan Shroud
3.	18-285	Fan Blade
4.	12-1575-1	Fan Motor
	12-1573-2	Fan Motor Lead
5.	18-422	Fan Motor Bracket
6.	18-2210	Motor Compressor
7.	18-2200-26	Compressor Relay *
8.	18-2200-29	Start Capacitor *
9.	18-2200-25	Compressor Overload *
10.	12-1018	Spout Micro Switch
11.	A-16360	Spout Pressure Plate
12.	2-1321	Pressure Plate Spring
13.	A-21307	Spout Body Only
14.	A-14254	Spout Casting
15.	A-22348	Water Reservior
16.	A-20713-1	Freezer Assembly
17.	A-18380-1	Gear Motor
18.	2-350	Drier
19.	16-563	Suction Valve Cap
20.	16-560	Suction Valve Core
21.	A-20578-1	Adapter

*Not Shown

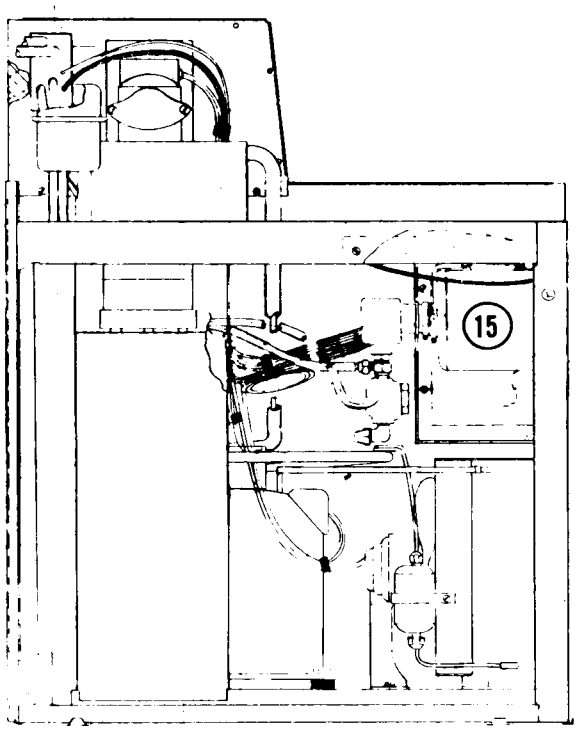
CHASSIS ASSEMBLY
S D - 1 J WATER COOLED

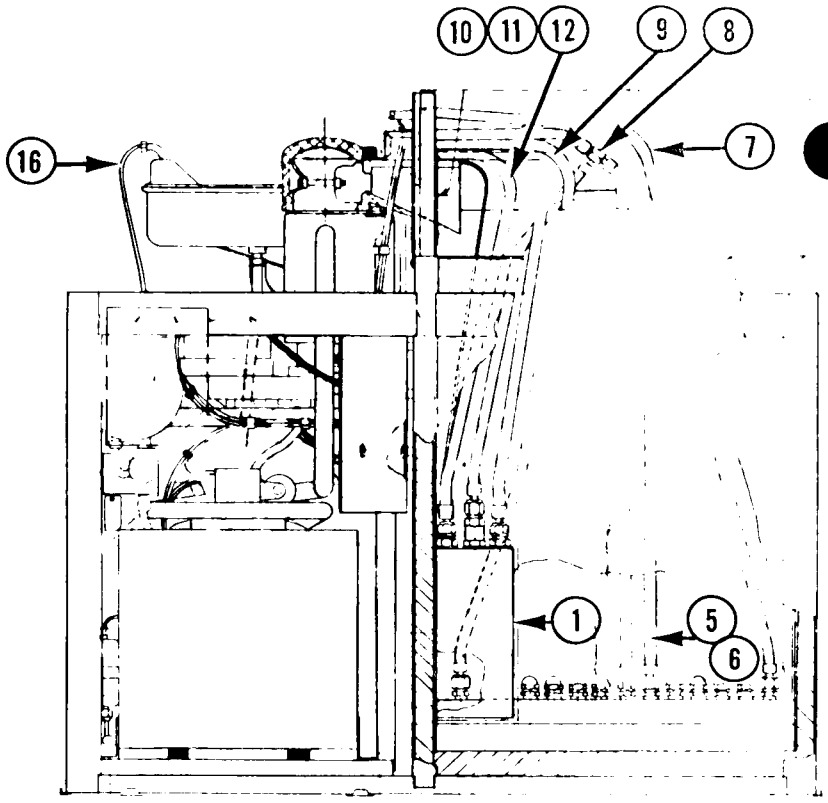


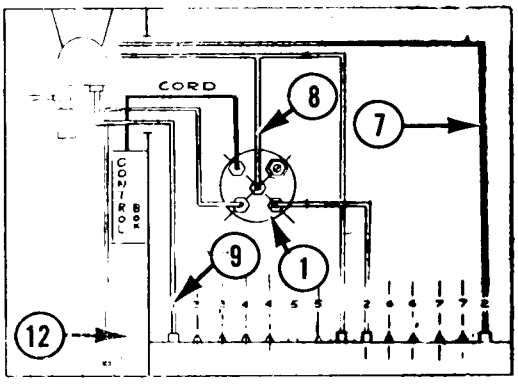


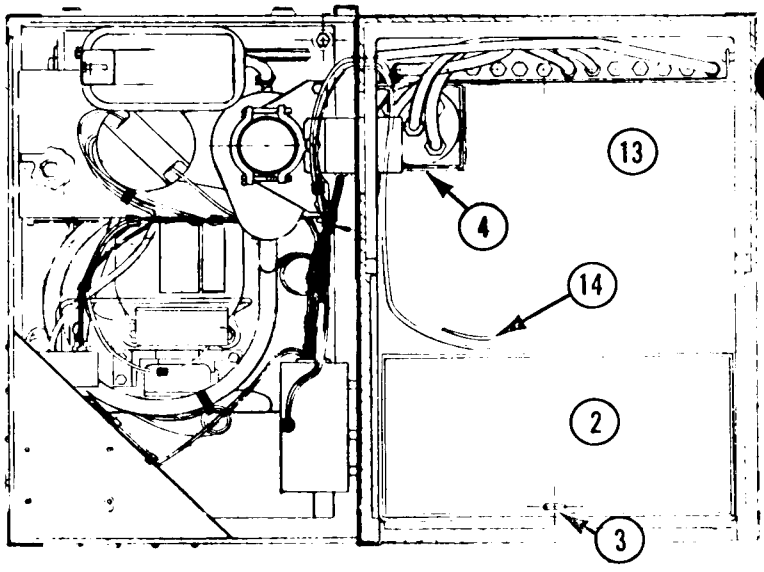
Item No.	Part No.	Description
1.	18-368	Condenser (Water Cooled)
2.	2-350	Drier
3.	16-563	Valve Cap
4.	16-560	Valve Core
5.	13-674-4	Tubing / per ft.
6.	5-397-2	Plastic Water Line / per ft.
7.	11-198	Water Regulating Valve
8.	12-1018	Spout Micro Switch
9.	A-16360	Spout Pressure Plate
10.	2-1321	Pressure Plate Spring
11.	A-14254	Spout Casting
12.	A-22348	Water Reservoir
13.	A-20713-1	Freezer Assembly
14.	A-18380-1	Gear Motor
15.	18-2210	Motor Compressor
16.	18-2200-26	Compressor Relay *
17.	18-2200-29	Start Capacitor *
18.	18-2200-25	Compressor Overload *
19.	A-15070	Spout Insulation Left
20.	A-15071	Spout Insulation Right
21.	A-8736	Straps

* Not Shown





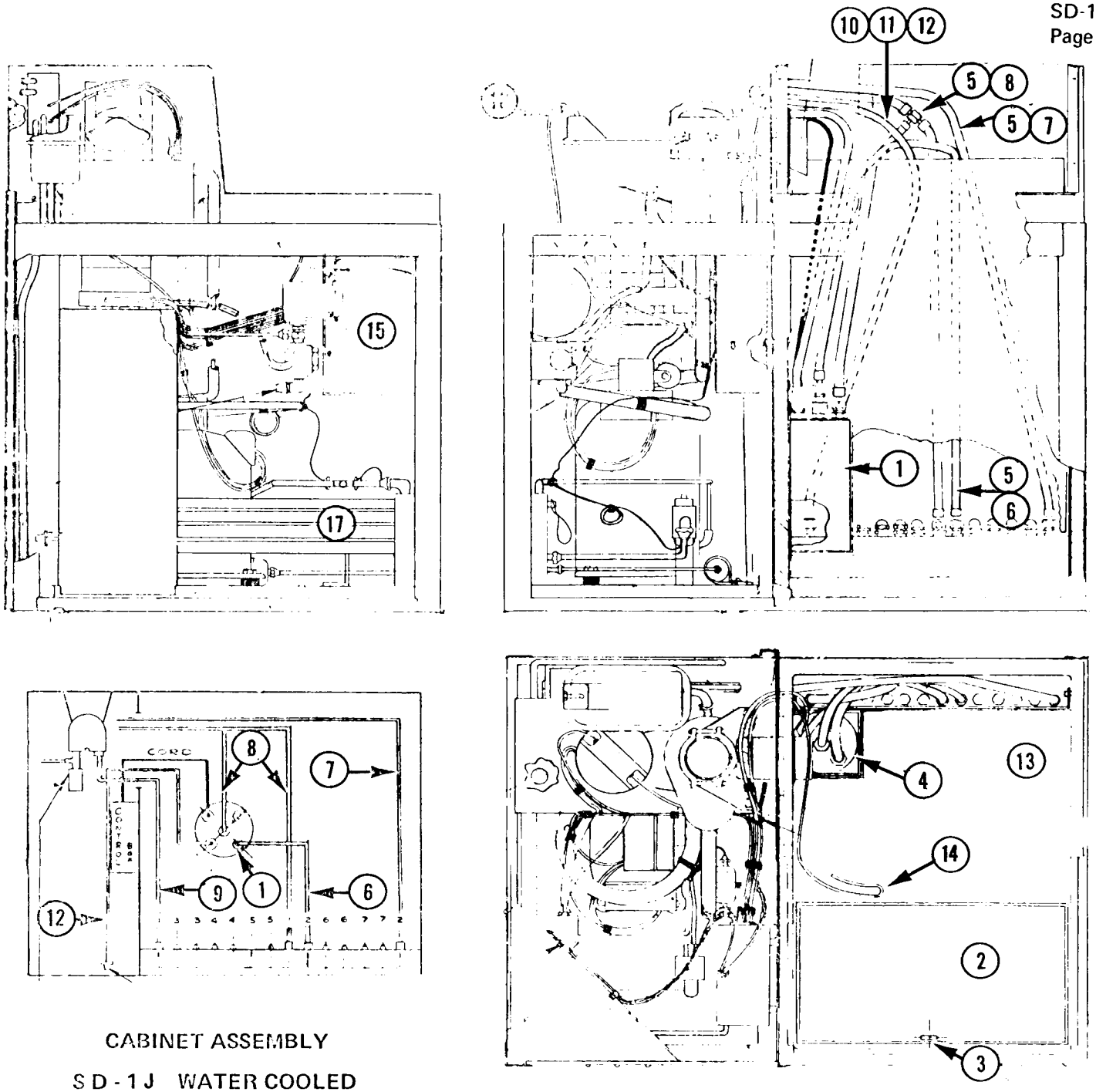




CABINET ASSEMBLY

SD-1J AIR COOLED

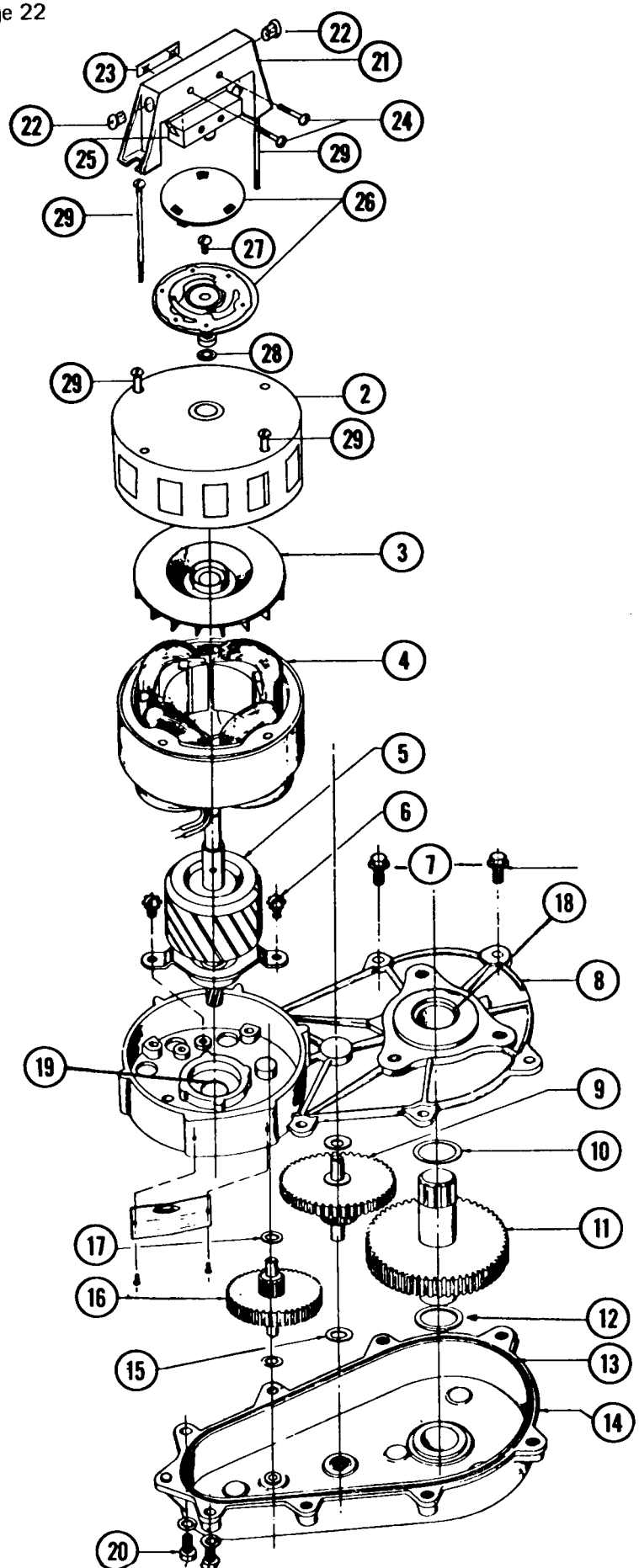
	Part Number	Description		Part Number	Description
1.	2-1916	Temprite Carbonator Tank	8.	A-17718	Water Line Assembly
	2-1916-7	Electrode	9.	A-17737	Flexible Line Assembly
	11-373-1	Liquid Level Control *	10.	3-1409-4	Washer
2.	A-18028	Cold Plate Assembly	11.	S-7044	Nut
3.	A-22106	Eye Bolt	12.	A-17732	CO_2 Line Assembly
4.	2-1859	Tank Bracket	13.	A-21645	Storage Bin Assembly
5.	2-1249	Washer	14.	A-21239	Control Bulb Holder
6.	A-17743	Soda Line Assembly	15.	A-21511-1	Carbonator Pump Complete
7.	A-17743-1	Soda Line Assembly	16.	5-397-1	Plastic Water Line/per ft.



CABINET ASSEMBLY

S D - 1 J WATER COOLED

	Part Number	Description		Part Number	Description
1.	2-1916	Temprite Carbonator Tank	9.	A-17737	Flexible Line Assembly
	2-1916-7	Electrode	10.	3-1409-4	Washer
	11-373-1	Liquid Level Control *	11.	S-7044	Nut
2.	A-18028	Cold Plate Assembly	12.	A-17732	CO_2 Line Assembly
3.	A-22106	Eye Bolt	13.	A-21645	Storage Bin Assembly
4.	2-1859	Tank Bracket	14.	A-21239	Control Bulb Holder
5.	2-1249	Washer	15.	A-21511-1	Carbonator Pump Assembly
6.	A-17743	Soda Line Assembly	16.	5-397-1	Plastic Water Line/per ft.
7.	A-17743-1	Soda Line Assembly	17.	18-368	Water Cooled Condenser
8.	A-17718	Water Line Assembly			

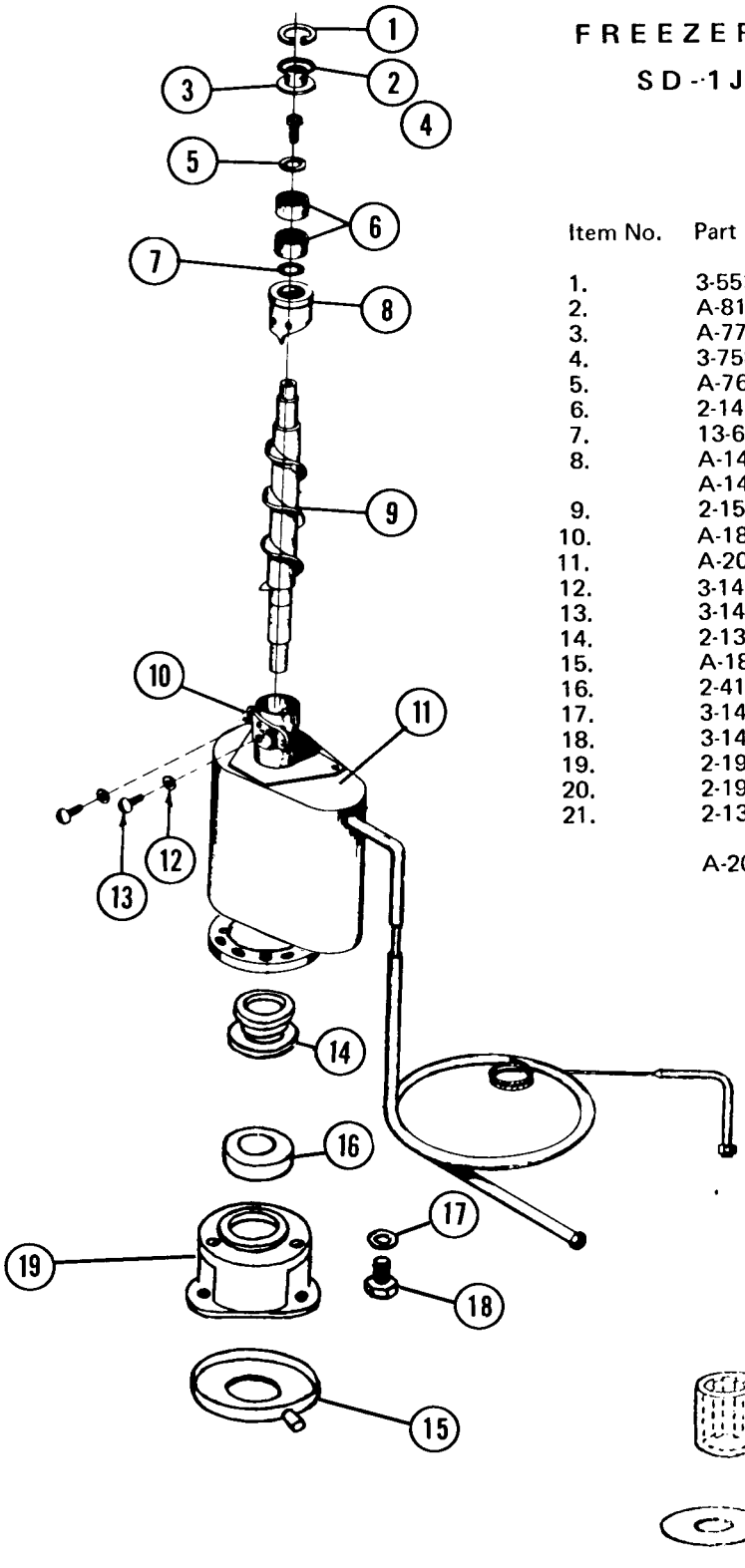


GEAR MOTOR ASSY.

Item	Part No.	Description
2.	A-17047	Motor Housing
3.	A-16915	Cooling Fan
4.	12-1400-1	Stator Assy.
5.	A-19884-2	Rotor Assy.
6.	3-1245	Screws
7.	3-1251	Flange Screws
8.	A-16920	Gear Case Cover
9.	2-1521	Gear & Pinion
10.	3-1408-5	Washer
11.	2-1513	Gear & Output Shaft
12.	3-1408-4	Washer
13.	2-1505	"O" Ring
14.	A-16919	Gear Case Assy.
15.	3-1408-6	Washer
16.	2-1520	1st Gear & Pinion
17.	3-1408-7	Washer
18.	2-1503	Grease Seal
19.	2-1504	Grease Seal
20.	3-1252	Screw
21.	8-579	Switch Bracket
22.	12-1213-3	Snap Bushings
23.	3-886	Twin Speed Nut
24.	3-1403-10	Screws
25.	12-1644	Switch
26.	A19898	Synchro Snap Assy.
27.	3-1248-1	Screw
28.	3-1417-6	Washer
29.	3-1403-43	Motor Bolts

A-18380-1 Gear Motor Assy. Complete

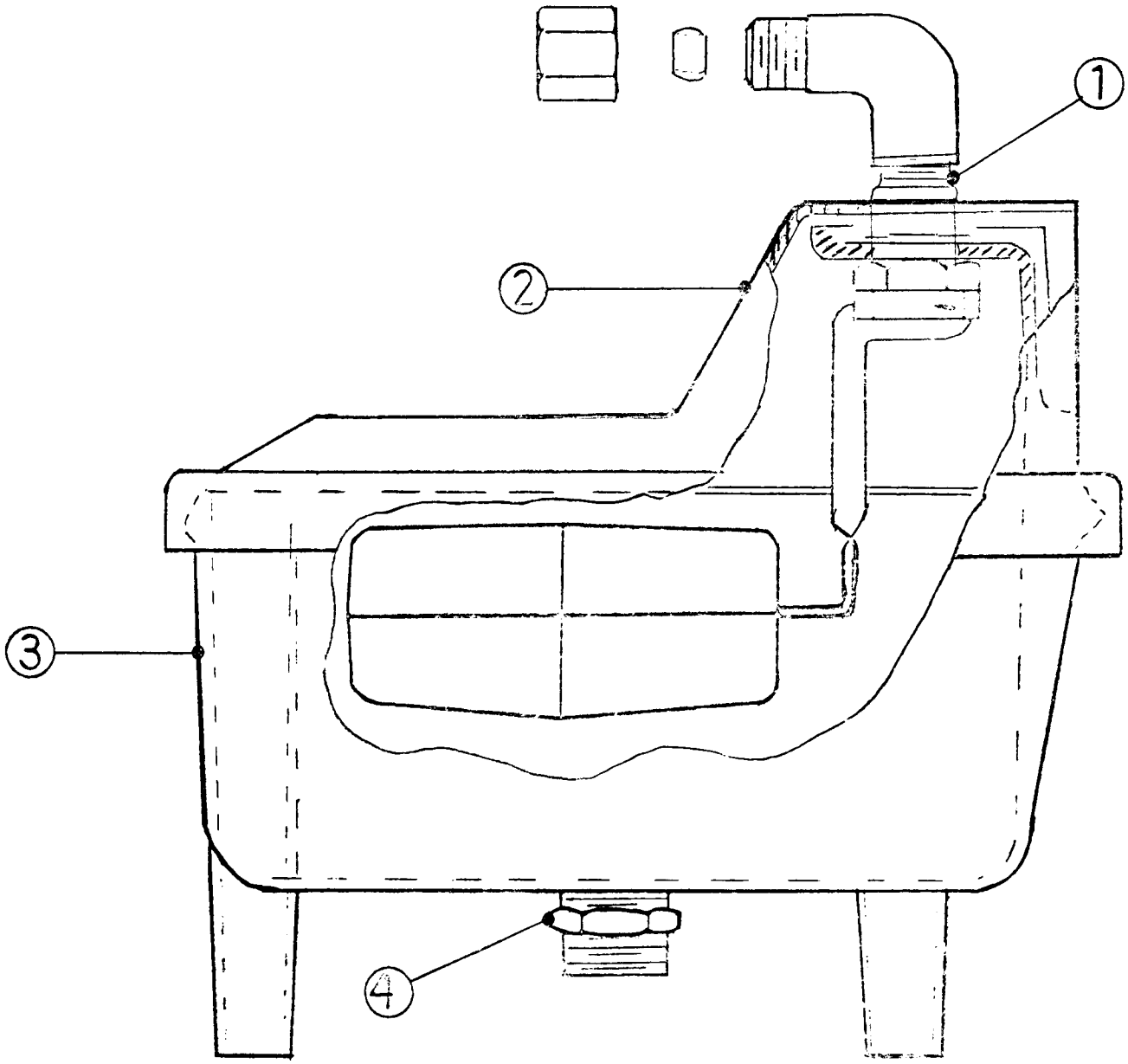
Output Shaft turns at 10 RPM



FREEZER ASSEMBLY

SD-1J MODELS

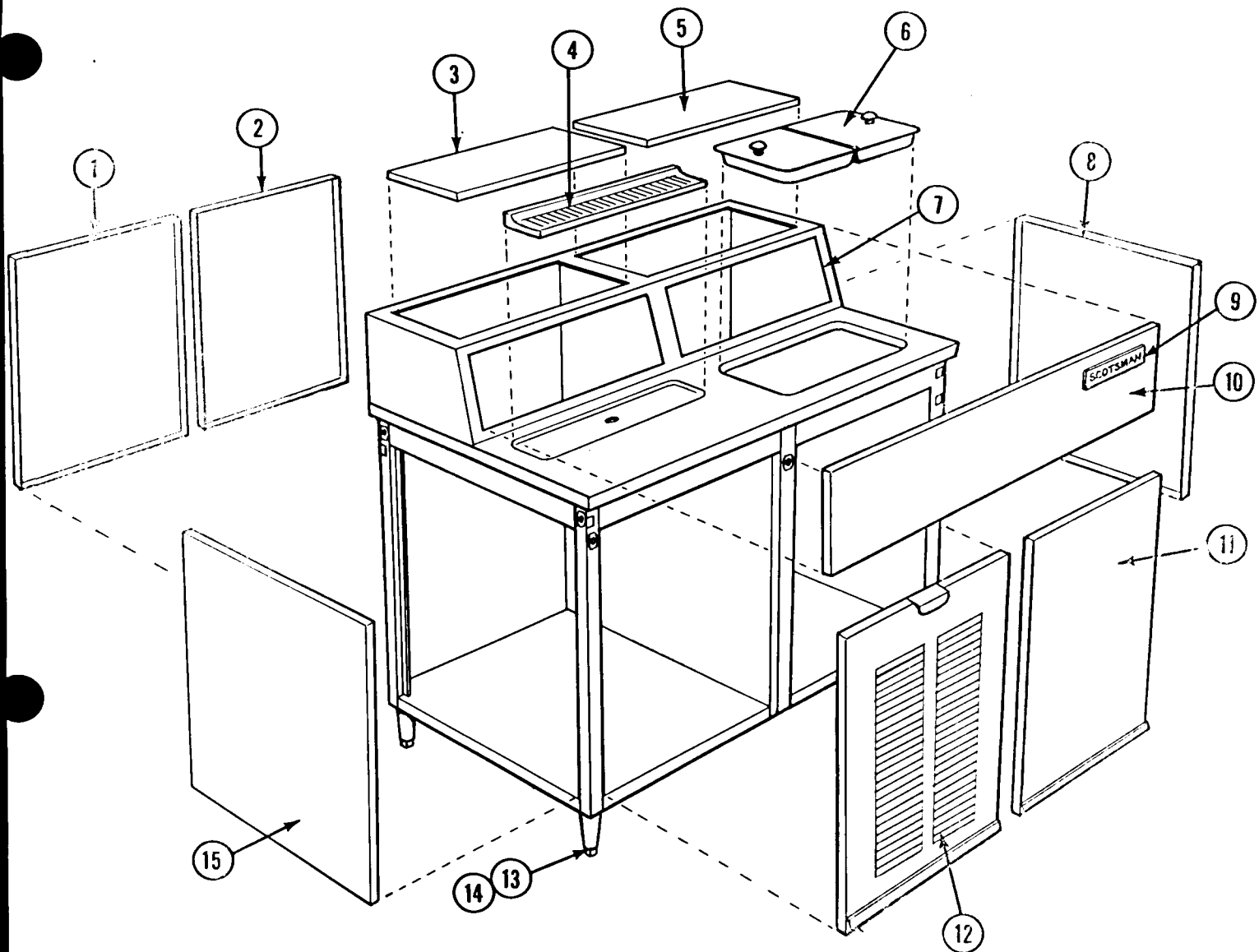
Item No.	Part No.	Description
1.	3-553	Snap Ring
2.	A-8162	Cap Hook
3.	A-7701	Cap
4.	3-758	Cap Screw
5.	A-7699	Washer
6.	2-1412	Bearing
7.	13-617-16	"O" Ring
8.	A-14591	Breaker
	A-14678	Breaker with bearing
9.	2-1538	Auger
10.	A-18430	Spout Plate
11.	A-20712	Worm Tube--Suction Line
12.	3-1410-3	Washer
13.	3-1403-48	Screws
14.	2-1300	Water Seal Use A-18945
15.	A-18153	Drip Pan
16.	2-417	Lower Bearing
17.	3-1408-3	Washer
18.	3-1405-42	Screw
19.	2-1914	Adapter
20.	2-1913	Spline Drive Coupling
21.	2-1347	Shaft Drip Shield Rubber
	A-20713-1	Freezer Complete



RESERVOIR ASSEMBLY
A-22348

1.	2-1793-2	Valve Assembly consisting of,
		Inlet Ell
		Straight Compression nut
		Compression Sleeve
		Valve Assembly with Float
2.	2-1793-3	Reservoir Cover
3.	2-1793-4	Reservoir Body
4.	2-1793-5	Reservoir mounting nut 3/8 - 13

CABINET PANELS SD-1J MODELS



Item	Part No.	Description
1.	A-17754	Rear Service Door
2.	A-17753	Rear Panel – Case Panel
3.	A-17829	Left Top Panel – Hood
4.	2-1553	Drip Grille
5.	A-17812	Right Top Panel –Hood
6.	2-1550	Ice Bin Door
7.	A-17616	Hood Assembly
8.	A-17749	Right – Panel – Case
9.	15-156	Scotsman Emblem
10.	A-22280	Front Panel – Hood
11.	A-17766	Front Panel – Case
12.	A-17615	Front Service Door
13.	A-15803-1	Leg
14.	8-522	Leg Leveler for A-15803-1
15.	A-19156	Left Panel-Case

Stainless Steel Models

To order items, 1-2-8-11-12-15 in. stainless steel, add a dash (-1) one to above part numbers.

CARBONATION

SOME FACTS ABOUT CO_2

Carbonic Anhydride, Carbonic Gas, or Carbon Dioxide, as it is variously termed, has the chemical symbol CO_2. It is under normal conditions a colorless, odorless gas, one and one-half times heavier than air. Chemically it is the combustion product of the element Carbon. It occurs in nature as the result of all types of combustion.

Carbonated Water has been found in natural springs in many parts of the world. Such springs have been known for centuries and have been highly regarded for beverage purposes.

Many of the desirable characteristics of carbonated beverages are due to the carbonic gas contained in them. It is therefore most important to determine the proper amount of carbonation such beverages should contain and having done that to provide the necessary control to insure uniformity of the product in this respect at all times.

PROPERTIES

Color	None
Odor	Pungent
Latent Heat	120 BTU/lb. at 0° F.
Critical Pressure	1,055 lbs. sq. in.
Critical Temperature	87.8°F.
Pressure in drums at 70°	839 lbs. sq. in.
1 lb. CO_2	8.50 Cu. ft. at atmospheric pressure and 50° F.
Solid CO_2 (Dry Ice)	110° F.

CARBONATION AND THE FACTORS WHICH GOVERN IT

Carbonated water is largely a mechanical mixture of CO_2 and water and the term "carbonated water" is usually understood to mean water that contains gas to its capacity.

This capacity varies with pressure and temperature. The amount of gas water will absorb increases directly with the pressure. The amount of gas water will absorb also increases as the temperature decreases.

Therefore, any measure of the actual gas content of carbonated water will depend on the two factors—pressure and temperature.

The unit of measure that has been adopted as standard is "the volume."

One volume is the amount of gas that water will absorb at atmospheric pressure and at 60° Fahrenheit.

A volume of gas occupies the same space as does the water by which it is abosrbed.

The pressure gauge on the carbonator or on the regulator or on the volume testing apparatus, does not show atmospheric pressure. This means that zero on the gauge is atmospheric pressure which is approximately fifteen pounds per square inch at sea level.

The pressure you will note, is constant—namely, atmospheric or 0 lbs. gauge. As the temperature of the water is lowered, the amount of gas it will absorb increases, until after 60° F. it is one volume. Note that from 60° to 150 the slope of the curve changes gradually, from 60° to 32° F., however, the curve changes more abruptly, and for each 10° difference in temperature, a decided increase in gas absorption is apparent, until at 32° or slightly above the freezing point, we find that 1.7 volumes of gas is absorbed by the water at atmospheric pressure. From this curve it will be apparent that the cooler the water is, the more gas it will absorb.

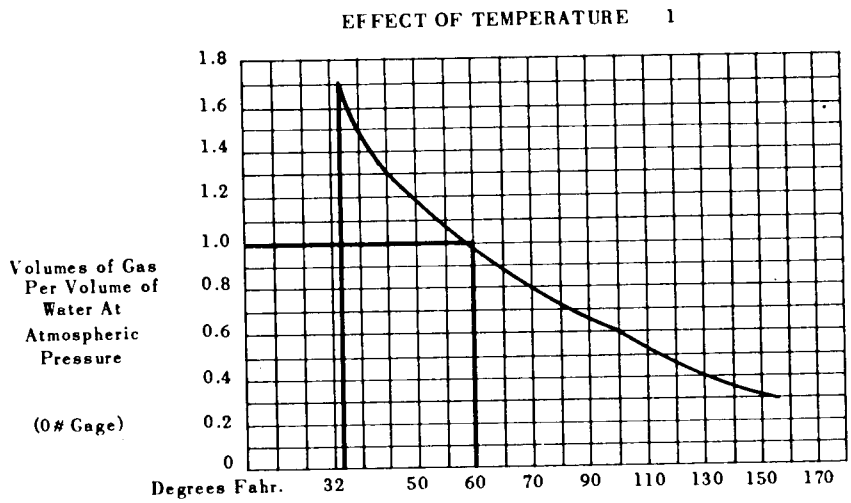


Chart No. 1 shows the effect of temperature change on the amount of gas water will absorb.

CARBONATION

EFFECT OF PRESSURE

Chart No. 2 shows the effect of increasing pressures, temperature being constant, on the amount of gas water will absorb. You will note that the chart is a straight line, of the same slope throughout, indicating that as the pressure is increased, the gas volumes increase. Furthermore, the "gas volume" increase is directly proportional to the pressure. To illustrate—at 0 lbs. gauge and 60° F. we find that the water will absorb one volume of gas, at 15 lbs. increase in pressure, water at 60° will absorb one additional volume of gas. If the temperature of the water is 45°,then, for every 15 lbs. increase in pressure, the water will absorb 1.3 volumes of gas.

FOR A UNIFORM BEVERAGE
Control Carbonation

Carbonation is an important taste ingredient of your beverage. One of the vital attributes of any beverage is uniform taste—bottle after bottle. There are four elements that influence the taste of a beverage.

1. FLAVOR
2. SWEETNESS
3. CARBONATION
4. TEMPERATURE

All but the final temperature of your drink are susceptible to direct control at your plant. Flavor and sweetness standards should be and probably are definitely established by means of exact formulas.

Carbonation standards should also be established for each flavor in your line—Sparkling water, ginger ales, and other "mixers" should be in the "high carbonation" bracket—the highest carbonation practically obtainable is the ideal to be sought for.

Cola drinks, root beer and other low acid drinks are in the next bracket usually carbonated to 3 or 3-1/2 volumes.

Some bottlers prefer fruit drinks, especially Orange—at a lower carbonation. Determine a standard of carbonation for each flavor that you consider best for your market.

Set up definite instructions for maintaining these standards, just as you maintain standard formulas for the sugar flavor, acid and other ingredients.

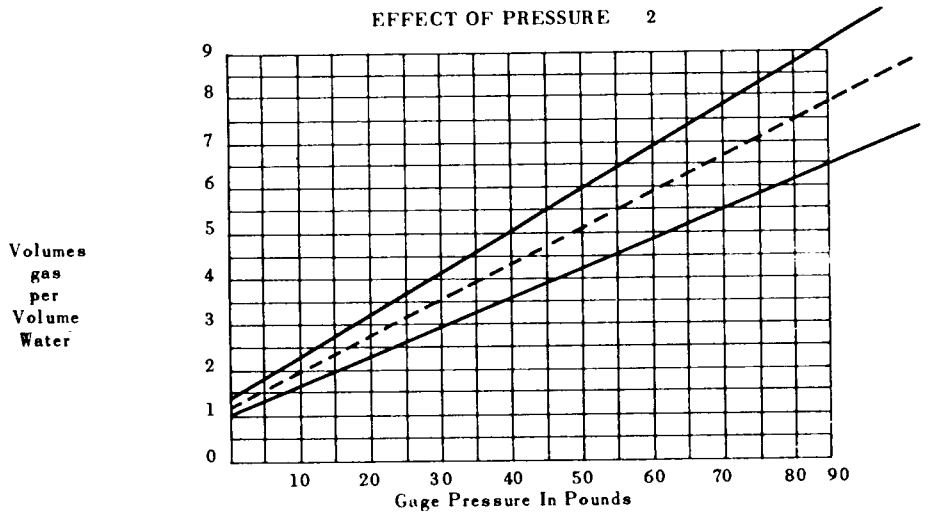
FLAVOR	CARBONATION STANDARD
Root Beer	3-1/2 Volumes

Having determined the carbonation standards, it is important that all concerned know how to control the factors that will enable you to maintain them.

HOW TO PRODUCE UNIFORM BEVERAGES

Bottlers know the importance of developing the proper formula for a beverage. They fully realize that for any bottled beverage to achieve popular favor, it must be right—in flavor, in taste, and in gas content.

The development of the proper formula for a beverage is, of course, an essential step in establishing that beverage in popular favor. To keep its popularity, the beverage must be the same from day to day and month to month. The formula must be followed exactly and the beverage produced in just the same manner.



CARBONATION

This means that perfect control of variable factors is necessary to assure uniformity.

The number of volumes of gas in a finished beverage has a definite relationship to the taste of the beverage. Correct carbonation means a sparkling, pungent, thirst-quenching beverage that completely satifies the consumer. Low carbonation leaves the beverage with a flat, insipid taste which is unsatisfactory. Finished beverages should be checked at frequent intervals to assure proper carbonation in the bottle.

The amount of sugar in a beverage determines,with a given acid content, its sweetness. The sugar also has another important function in the beverage. Sugar makes the "body" of the beverage and "body" is a necessary background for any flavor. A change in the body changes the taste of the beverage even though the same flavor is used. High quality extracts are, of course, a necessity.

Control of sugar content of the beverage is very important. It depends on the beaume of syrup used and the throw used. Variation in syrup density changes the finished beverage if the throw remains the same. Variation in the throw will also change the beverage if the syrup density is unchanged. By checking the beaume of the finished beverage a control is established where it does the most good.

Uniform finished beveraged can be made only be positive control over such variable factors in beverage production.

Check the density of your syrup with a beaume scale.

Check the actual throw in the bottle by measuring individual sample bottles.

Check the final result by using the finished drink tester on the completed beverage.

Check the carbonation in the finished beverage.

KNOW YOUR WATER

Water that is satisfactory for drinking purposes is generally satisfactory for carbonating. There are very few exceptions to this rule.

The water used for carbonating must be clean. That means free from suspended matter of all kinds including water organisms which may be too small to see except under a microscope.

All water should be properly filtered and it is advisable to use an activated carbon unit after the filter. The ideal set up is to follow the activated carbon unit with a paper filter. This will prevent particles of the carbon coming though with the water.

Chemical composition of the water does not affect carbonation within the limits of potable water. If enough material were in solution to interfere with carbonation, it would not be possible to use the water for drinking purposes.

Organic matter in solution can cause trouble if present in excessive quantities but this trouble is removed by activated carbon.

It may be necessary to treat water chemically in some cases. Hardness can be removed by chemical treatment and that is sometimes advisable to prevent scale formation on machinery, particularly on soaker parts. Alkalinity can be reduced by chemical treatment and that is advisable if the alkalinity is high enough to affect the taste of the water or if it is sufficient to neutralize too much of the acid in the beverage. If objectionable material is present in the raw water, that may require chemical treatment.

Such treatment, properly handled, does not affect carbonation and it does not change the necessity for proper filtration. Chemical treatment should be followed by filtration.

FOES OF CARBONATION AND HOW TO COMBAT THEM

AIR

Too much air in the water interferes with proper carbonation and also causes the CO_2 gas to leave the water more quickly when the bottle of finished beverage is opened. It is therefore important to reduce the amount of air present to the minumum.

Some air is present in the raw water supply. More may be added in the mechanical handling of the water. When such water reaches the carbonator, the CO_2 gas tends to drive it out of the water. If steps are not taken to remove it, this air will accumulate in the carbonator and much of it will be carried through in the water and into the finished beverage. That is why all liquid carbonators have an automatic air snift.

CARBONATOR SECTION

HOW IT WORKS

Most of the cold drinks served at a soda fountain are carbonated. Therefore, nothing is more important to the successful operation of a fountain than cold, properly carbonated water to make drinks sparkling, full flavored and fully satisfying in quality.

Water is carbonated by combining it with carbonic acid gas (CO_2). This is done in a sealed chamber by forcing gas from a drum through a pressure regulating valve into the water in this chamber. As the carbonated water is used from this chamber, it is replaced by a high pressure water pump. The operation of this pump is controlled by an automatic switch device which senses the water level.

Two conditions must be maintained in order to induce and hold carbonic gas in water. They are:

1. Pressure
2. Adequate refrigeration or cooling.

In the SCOTSMAN DISPENSER, pressure is supplied by the gas drum and is present throughout the system to the carbonator tank and keeps the water carbonated. Without adequate cooling, however, carbonation escapes rapidly after the water leaves the tank. Soft drinks should be dispensed at 40° F. or below. The colder the water the greater the carbonation. Cooling with ice at temperature of 32° F. can be reached and held without danger of freezing as is true with mechanical refrigeration systems. Thus, less CO_2 is used to achieve the same degree of carbonation in a drink.

THE GAS DRUM— Source of carbonation

Drums for carbonic acid gas are made of drawn steel tubing and are built to withstand great pressure. As delivered, they contain liquid gas reduced to liquid form by tremendous compression.

Each one is equipped with a safety valve set to blow out before internal pressure can explode the drum itself. Once this valve "pops off", the contents of a drum will escape. Drums, therefore, should always be stored in a cool place to keep the liquid from expanding and increasing pressure inside the gas drum.

Drums are classified by weight. They come, as a rule, in two sizes: 20-lb. drums and 50-lb drums. These weights refer to the compressed liquid contents and are in addition to the tare weight usually indicated on the head of each drum.

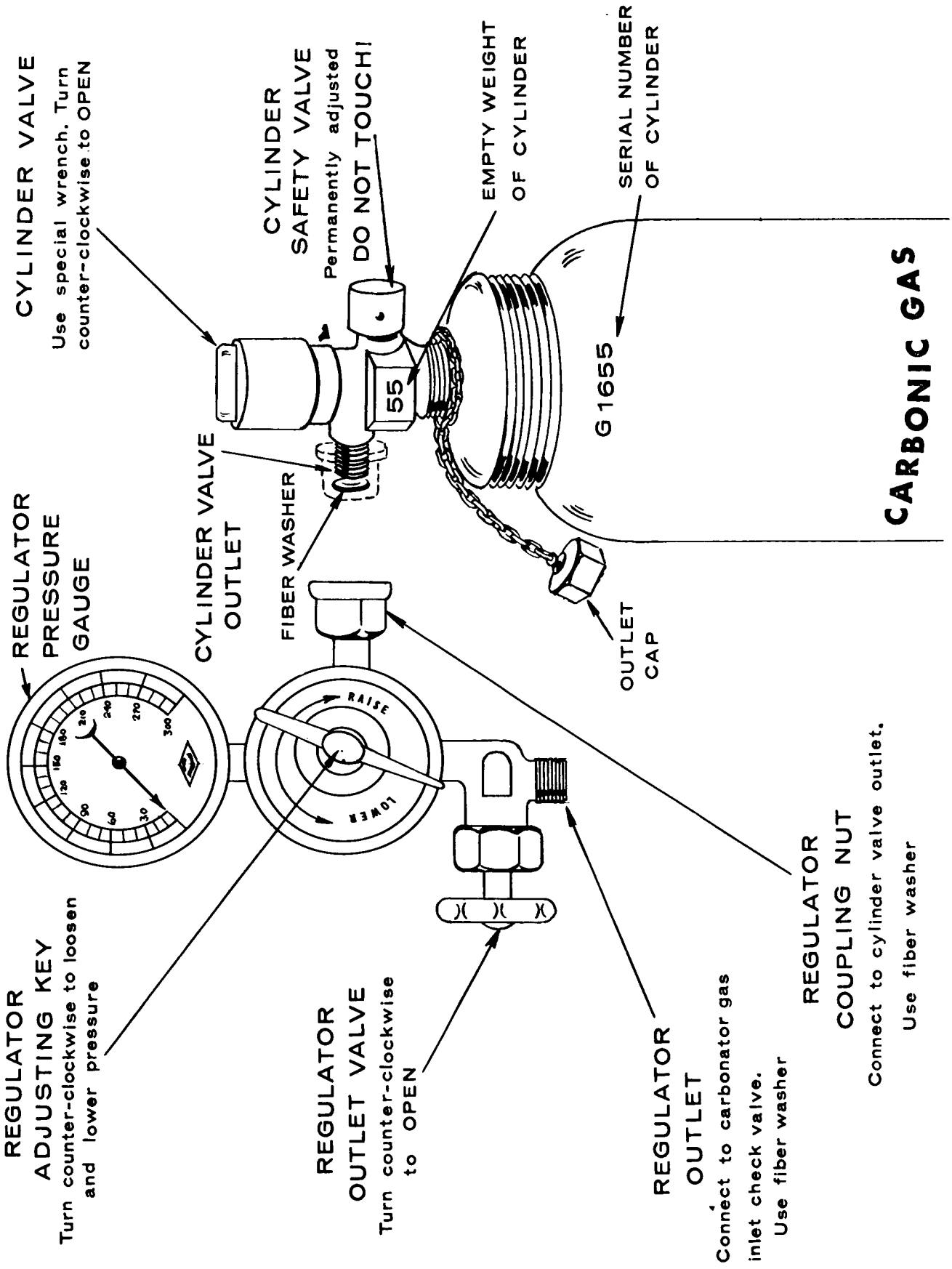
HOW TO CHANGE A GAS DRUM
NEXT PAGE
SINGLE REGULATOR IS SHOWN

1. Close drum head valve (A) (clockwise).
2. Close regulator outlet valve (B) (clockwise).
3. Disconnect regulator from drum by removing regulator coupling nut (C). Gauge should drop to "0".
4. If gauge does not drop to "0", turn regulator key (D) clockwise to allow all gas to escape from the body of the regulator through the main connection.
5. Turn regulator key (D) counter-clockwise until it is free and loose and regulator is closed.
6. Put full drum in place of one being replaced. Couple regulator coupling nut (C) to new gas drum, first making certain that there is a good fiber washer at the connection.
7. Open drum head valve (A) all the way, turning it as far as it will go to bring packing up tight against the shoulder of the valve stem.
8. Turn regulator key (D) clockwise slowly until standard operating pressure, as indicated on the gauge, is reached. Unless you have a low pressure carbonator the standard operating pressure is 100 lbs., depending on the manufacturer's recommendation.
9. Open regulator outlet valve (B) slowly and release gas to carbonator. As pressure equalizes, open this valve all the way.

WASHERS: In gas connections and lines under high pressure, use fiber washers only. In lines carrying liquids or subject to relatively low pressures, rubber or leather washers should be used.

Keep gas turned on at all times to insure uniform well-carbonated water.

Shown is single stage regulator with gauge as used on gravity type drink dispenser heads. For pressure type dispensing heads a two stage or hi and lo pressure regulator and gauge are required.



CARBONATOR SECTION

Make sure that the regulator coupling nut and regulator valve coupling are tight and that both contain a good fiber washer.

Make sure that the water back-pressure check valve is functioning properly.

Sometimes it is difficult to detect a leak in the regulator gauge. In checking here apply the lather generously, and watch closely.

If a leak occurs near either end of a hose, cut off the defective end and refasten hose with clamps. Otherwise, replace hose.

OPERATION—Gravity type dispensing heads.

Turn on CO_2 gas and adjust regulator to 100 lbs. pressure, open soda water faucet for one-half minute to blow all air out of carbonator. Close faucet, turn on water supply and turn on power supply to pump motor. When pump stops, open faucet again until full stream of water is obtained. Draw several glasses of water and note pump operation. Pump will operate after approximately 14 ounces of carbonated water have been drawn.

The carbonator will operate satisfactorily on CO_2 pressures from 80 to 120 pounds. set regulator at 80 lbs. for maximum gas economy or adjust to suit requirements of the faucet used.

OPERATION—Pressure type dispensing heads, kits.

Pressure types dispensing systems require both hi and lo pressure gauges as well as syrup tanks etc.

Hi pressure CO_2 gauge feeds carbonator, lo pressure gauge feeds pressure to syrup tanks, forcing syrup thru lines to dispensing heads. Normal pressure setting is 30 lb. gauge.

See accompanying sketch for details.

The system is completely automatic in operation, and requires no attention except maintaining CO_2 supply, and periodic servicing of water supply line filter.

IMPORTANT: Insufficient water supply will cause noisy operation and eventual damage to pump. If strainer and filter are clear and line valves open, noisy pump operation indicates insufficient water supply.

WARNING: If the installation is idle and exposed to freezing temperatures, disconnect water supply line and blow all water out of carbonation system.

HOW TO FIND AND STOP GAS LEAKS

Whenever a fresh drum of CO_2 gas is connected to the carbonating system, open the drum valve until the regulator gauge reaches maximum pressure (approximately 120 to 125 lbs.) and then close drum valve.

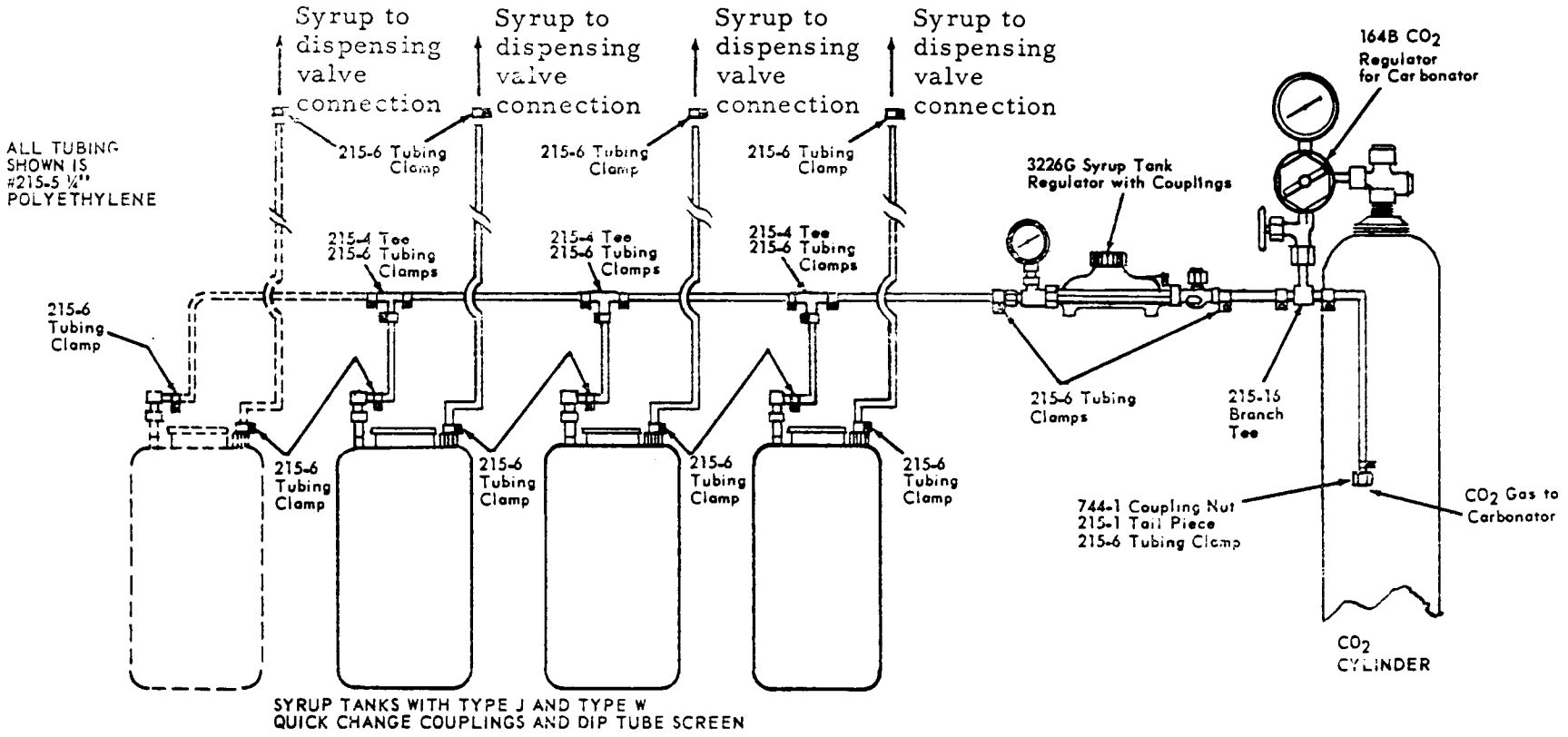
If the needle of the gauge on the regulator continues to drop, there is a leak in the system. Due to some absorption of gas in the water in the carbonator, the needle may drop a few pounds, but it should then come to a stop if there is no leak.

If a leak is found by this method, proceed to locate it as follows:

You can test the carbonation system for gas leaks by applying shaving soap lather with a shaving brush to all joints, connections, and valves. If there is a leak, bubbles will apear.

If gas is escaping at the stem of the drum head valve, open valve all the way. Usually this closes a leak through the packing round valve system. Also tighten packing nut to keep gas from escaping through packing.

DIAGRAM OF PARTS AND ACCESSORIES FOR INSTALLING SYRUP TANKS ON MODEL SD-1J COMBINATION ICE MAKER AND DISPENSER



Typical layout for use on pressure type dispensing heads - kits -

Source: Excellall Products Div.
Bastian Blessing Co.
4201 W. Peterson Ave.,
Chicago, Illinois

CARBONATION SECTION

Carbonator Tank Operations

Water from the source first goes through a filter to remove foreign particles or odors from the water depending on local water conditions. It is recommended that a good filter be installed. The water then enters the machine cabinet and goes through an aluminum cold plate in the ice bin to chill the water before carbonation.

From the coils it goes to the carbonator pump where it is first strained to remove any particles in the water and then pumped into the carbonator tank at high pressure by the heavy-duty carbonator pump (100 gph). The water inlet to the carbonator tank has a check valve; therefore, the water enters the tank only when the pump is running and the water pressure is above the CO_2 pressure in the tank. A water jet breaks up the water into a fine spray as it enters the tank. The CO_2 atmosphere inside the tank mixes with the water to produce the carbonated water. The CO_2 gas enters the tank through a check valve from the CO_2 cylinder.

The carbonated water leaves the tank and goes through the stainless steel soda water cooling coils where it is chilled before going to the dispensing valves for use as carbonated water or in carbonated drinks. CO_2 gas from the cylinder goes to two places. First to the carbonator tank where it is mixed with water to produce soda or carbonated water. It also goes to each of the four syrup tanks where its pressure is used to force the syrup in the tanks through the syrup lines, the stainless steel syrup cooling coils in the ice bank, and on to the dispensing valves where it is mixed with the carbonated water to provide carbonated soft drinks.

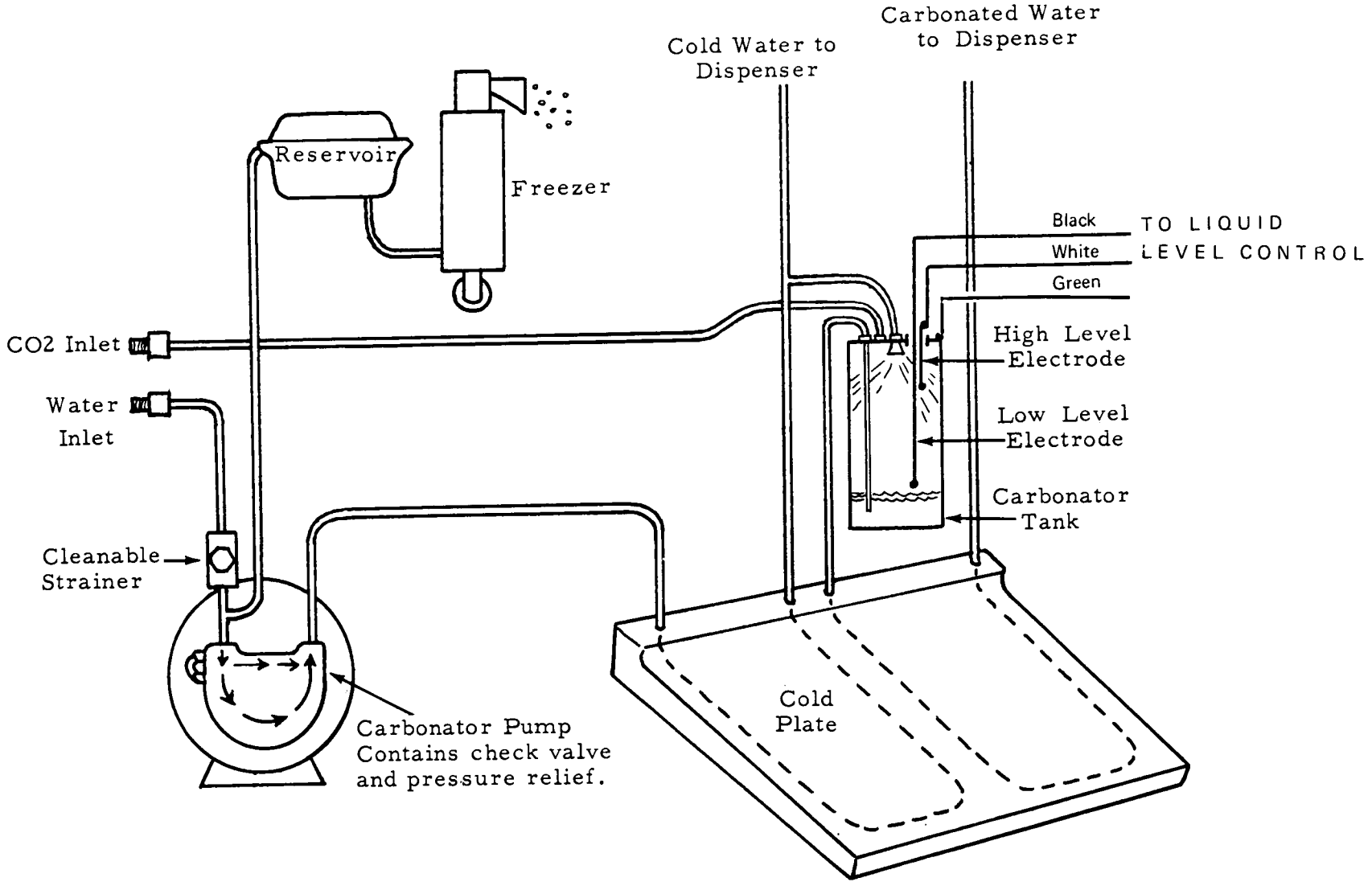
Liquid Level Control Operation

The water level in the carbonator tank and the switching of the pump is controlled by electrodes in the carbonator tank and the liquid level control. This is how it works.

The control supplied with this machine is solid state control that supplies a low voltage circuit through the carbonator tank. This control is highly sensitive and will operate properly with very pure water, even distilled water.

At start up the pump motor relay contacts in the liquid level control are closed and the pump motor is running. As the water rises in the tank it comes in contact with the low-level electrode. Nothing happens since the wire from the electrode goes to an open switch or contact on a relay in the liquid level control. As the water continues to rise, it then makes contact with the high-level electrode.

At this instant an electrical circuit is completed from the common electrode (tank body), through the water to the high-level electrode. through the electronic control and back to the common electrode. The completion of this circuit indirectly energizes the relay which open the pump motor circuit and closes a circuit to the electrode. Now as carbonated water is used and the water breaks contact with the high-level electrodes, the pump will stay off since the relay electrode contacts provide a circuit between the high and low-level electrodes. As the carbonated water level continues to drop, it breaks contact with the low-level electrode. This indirectly de-energizes the relay and the pump starts filling the tank. This cycle continues over and over again, always maintaining a carbonated water level between the tips of the two electrodes.



WATER SYSTEM SCHEMATIC

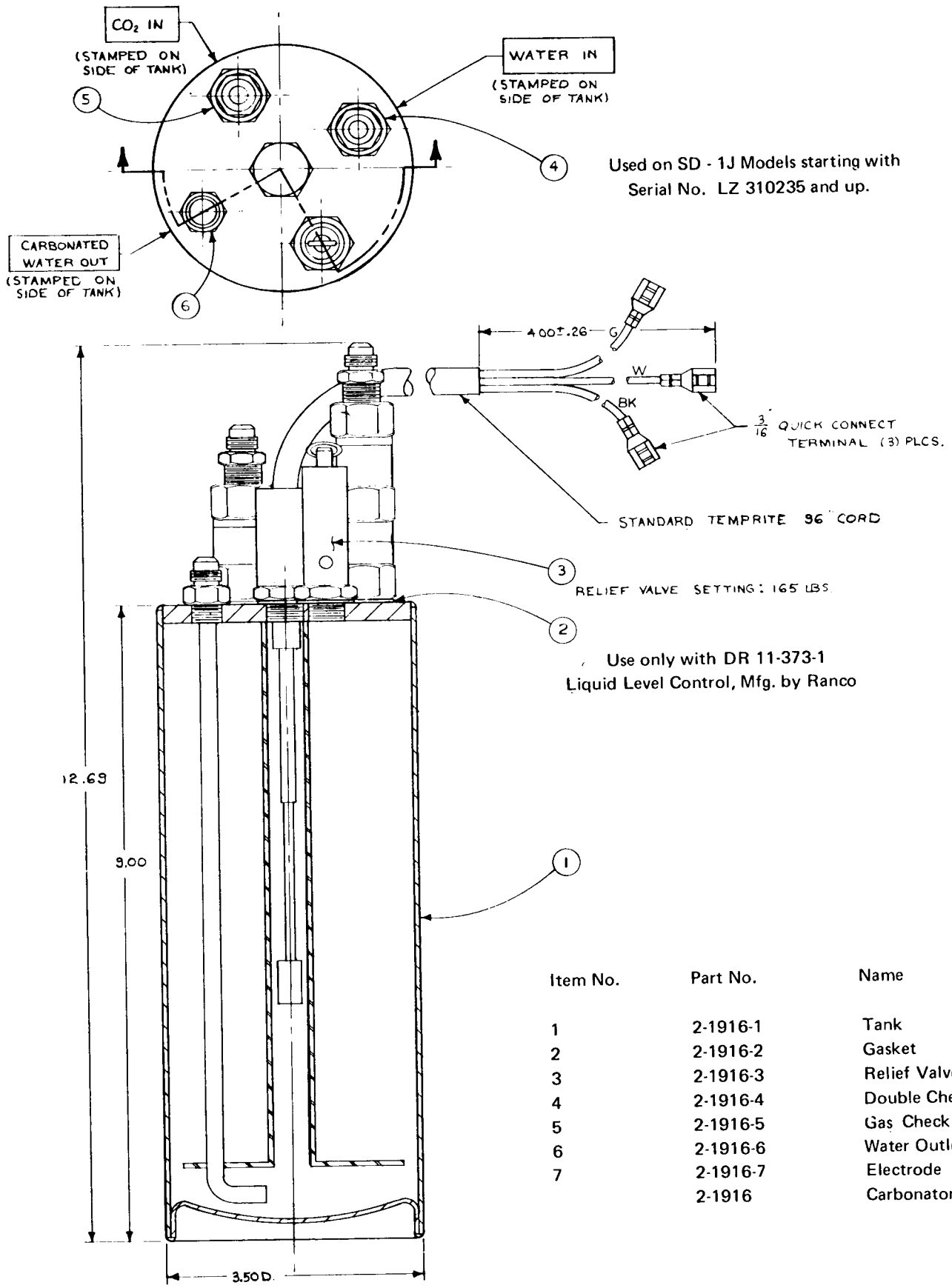
SERVICE ANALYSIS
CARBONATION SECTION

COMPLAINT	POSSIBLE CAUSE	CORRECTION
No carbonated water (pump does not run).	Motor burnt out.	Replace.
	Liquid level control.	Check relay wiring, contacts.
	Bad bearings causing pump to stop.	Repair or replace motor.
	Tank electrode shorted.	Repair or replace.
	Pump jammed.	Check for foreign particles in pump housing, clean or replace.
No carbonated water (pump runs)	Pump running backwards	Reverse wiring inside motor.
	Open in transformer, relay coil, or high level electrode.	Repair or replace.
	Worn Pump.	Replace.
	Pump check valve leaks.	Clean or replace.
	Pump relay bypass valve opens too soon	Clean; valve is adjustable, set higher; or replace.
	Clogged filter or inlet screen.	Clean or replace.
	Water line blocked.	Check for smashed washer at fittings or plugged check valve on tank.
Flat carbonated water.	Gas drum empty or low.	Replace drum.
	Gas turned off.	Turn on gas.
	Regulator set too low.	Increase pressure.
	Gas line plugged by swollen washer.	Replace washer.
	Water pressure too high.	Adjust if possible or install water pressure regulator.
Metallic taste.	Carbonated water backing up into city water line.	Clean water back-pressure check valve, replace washer.
	Carbonated water line connected by mistake to brass or copper lines. Use proper beverage tubings.	Make proper connection using approved tubing.
Carbonated water off taste.	Oil, dirt or grease inside carbonator.	Clean carbonator.
	Oil or pipe dope in water lines.	Clean and flush.
	Tainted gas.	Sniff gas at drum head to determine if drum should be replaced.
	Water filter needed or filter filter element bad	Install a good filter or replace filter element.

SERVICE ANALYSIS
CARBONATION SECTION

COMPLAINT	POSSIBLE CAUSE	CORRECTION
Milky carbonated water.	Air in carbonator.	Vent carbonator.
	Pump sucking air.	Check for loose fittings. Replace pump.
Gas only flows from dispenser valve.	Water turned off.	Turn on.
	Pump motor not cutting on.	Check liquid level control. Check carbonator tank electrode.
Carbonator fills with water	Water turned on before CO_2 pressure.	Shut off water supply. Empty water from tank with pump. Apply CO_2 pressure first, then water pressure.
	Water pressure too high	Adjust if possible, or install pressure reducer.
	Gas pressure too low.	Set regulator key to deliver proper gas pressure.
	Gas drum empty.	Replace.
	Open in transformer, relay coil, or high level electrode.	Repair or replace.
Carbonated water backs up into city water line.	Dirty or worn back-pressure check valve.	Clean or replace valve seats.
Excessive pumping.	Closed water supply valve.	Open valve.
	Water supply (building or city) shut off.	Re-establish source.
	Automatic switch out of order	Check switch, replace if necessary.
	Water inlet screen clogged.	Remove and clean screen.
	Pump inlet or check valve out of order.	Repair or replace.
	Swollen washers in hose couplings obstruct flow of water	Replace washers.
	Tank electrode shorted.	Repair or replace.
Carbonator pump pounds water running in spurts.	Air in pump.	Vent pump.
	Water off.	Turn water on.
	Filter or strainer plugged.	Clean or replace.
	Inlet line too small.	Must be 3/8" copper or larger.

TEMPRITE CARBONATOR TANK



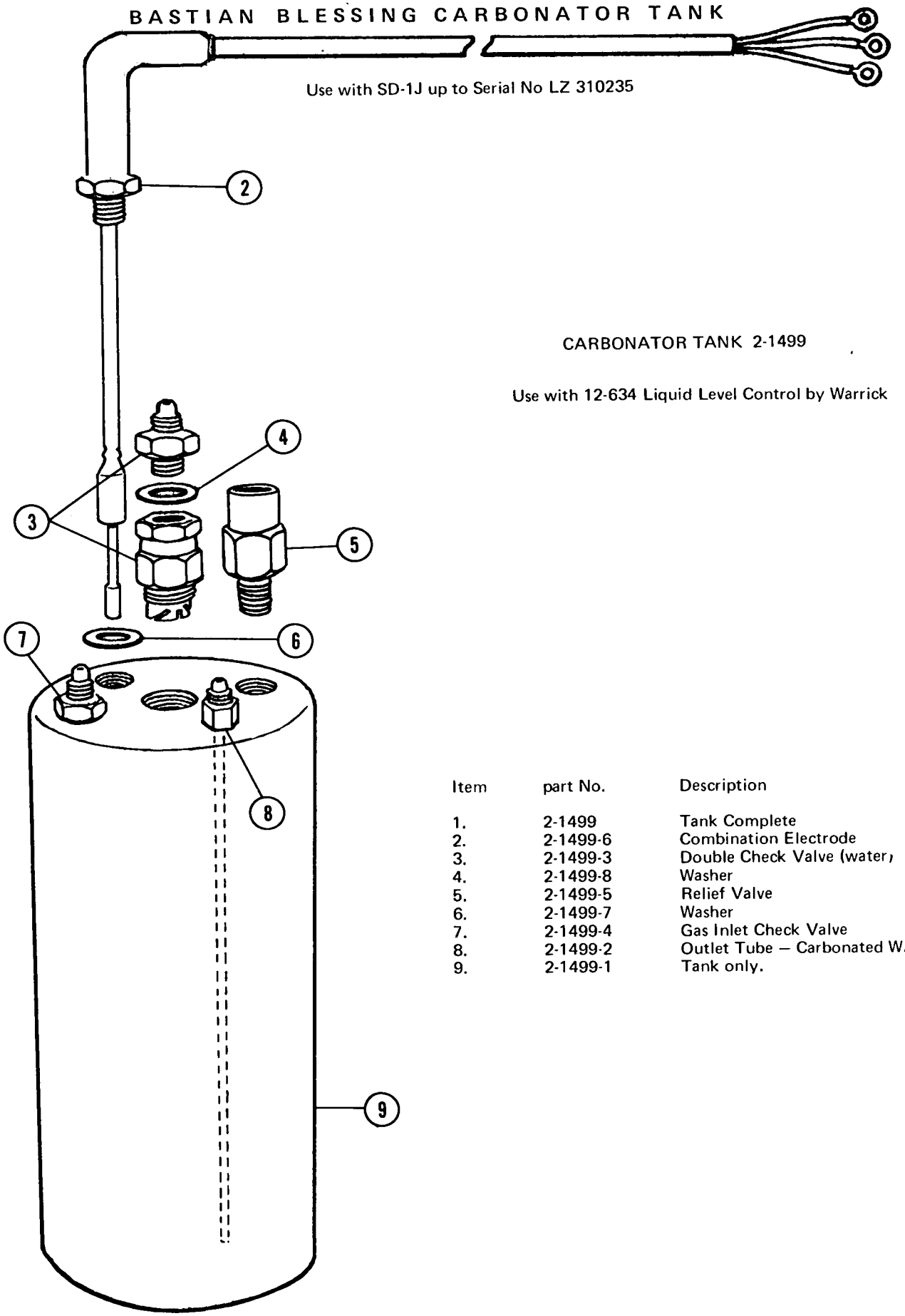
Used on SD - 1J Models starting with Serial No. LZ 310235 and up.

Use only with DR 11-373-1 Liquid Level Control, Mfg. by Ranco

Item No.	Part No.	Name
1	2-1916-1	Tank
2	2-1916-2	Gasket
3	2-1916-3	Relief Valve
4	2-1916-4	Double Check Valve
5	2-1916-5	Gas Check Valve
6	2-1916-6	Water Outlet
7	2-1916-7	Electrode
	2-1916	Carbonator Tank Complete

BASTIAN BLESSING CARBONATOR TANK

Use with SD-1J up to Serial No LZ 310235

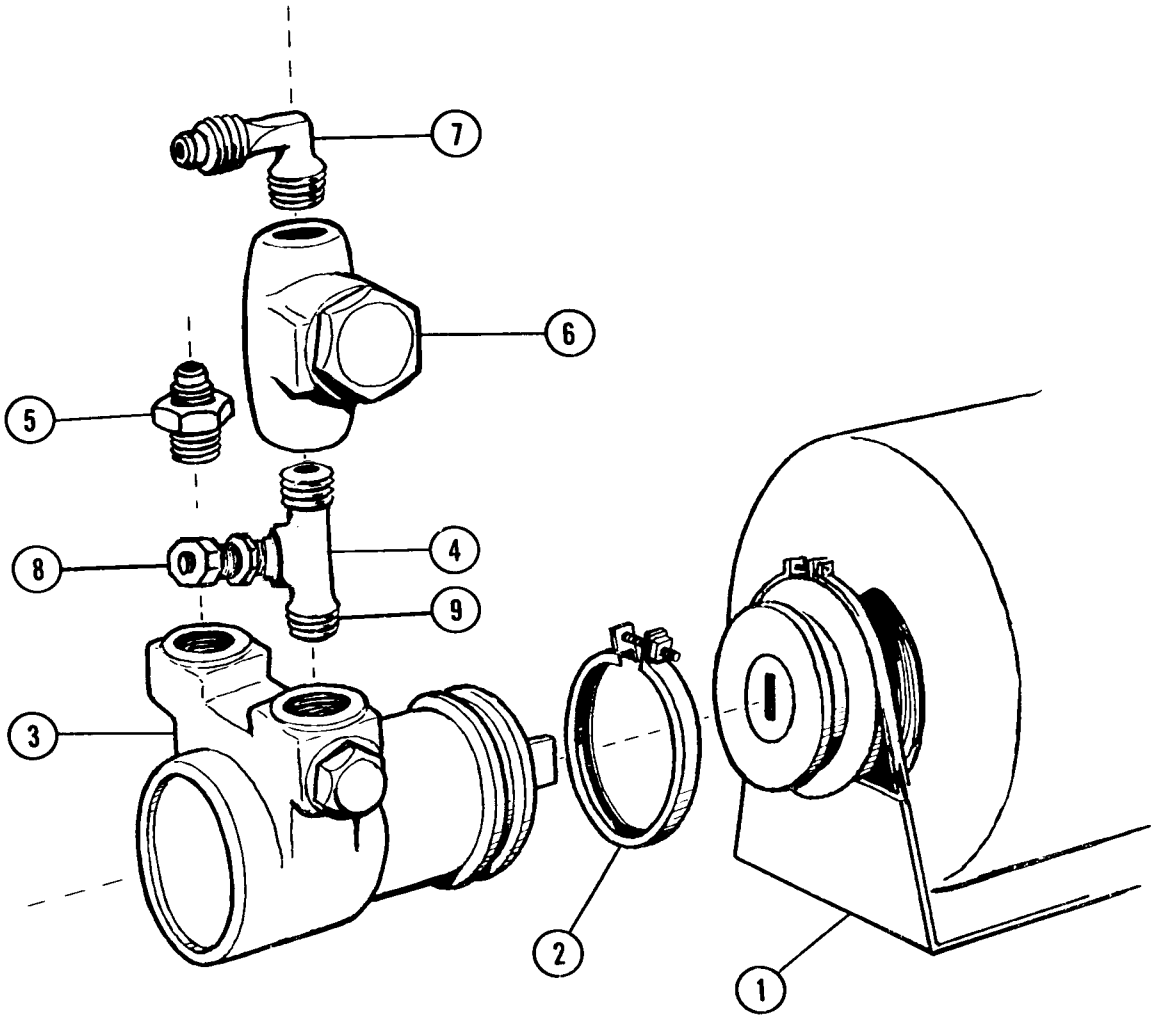


CARBONATOR TANK 2-1499

Use with 12-634 Liquid Level Control by Warrick

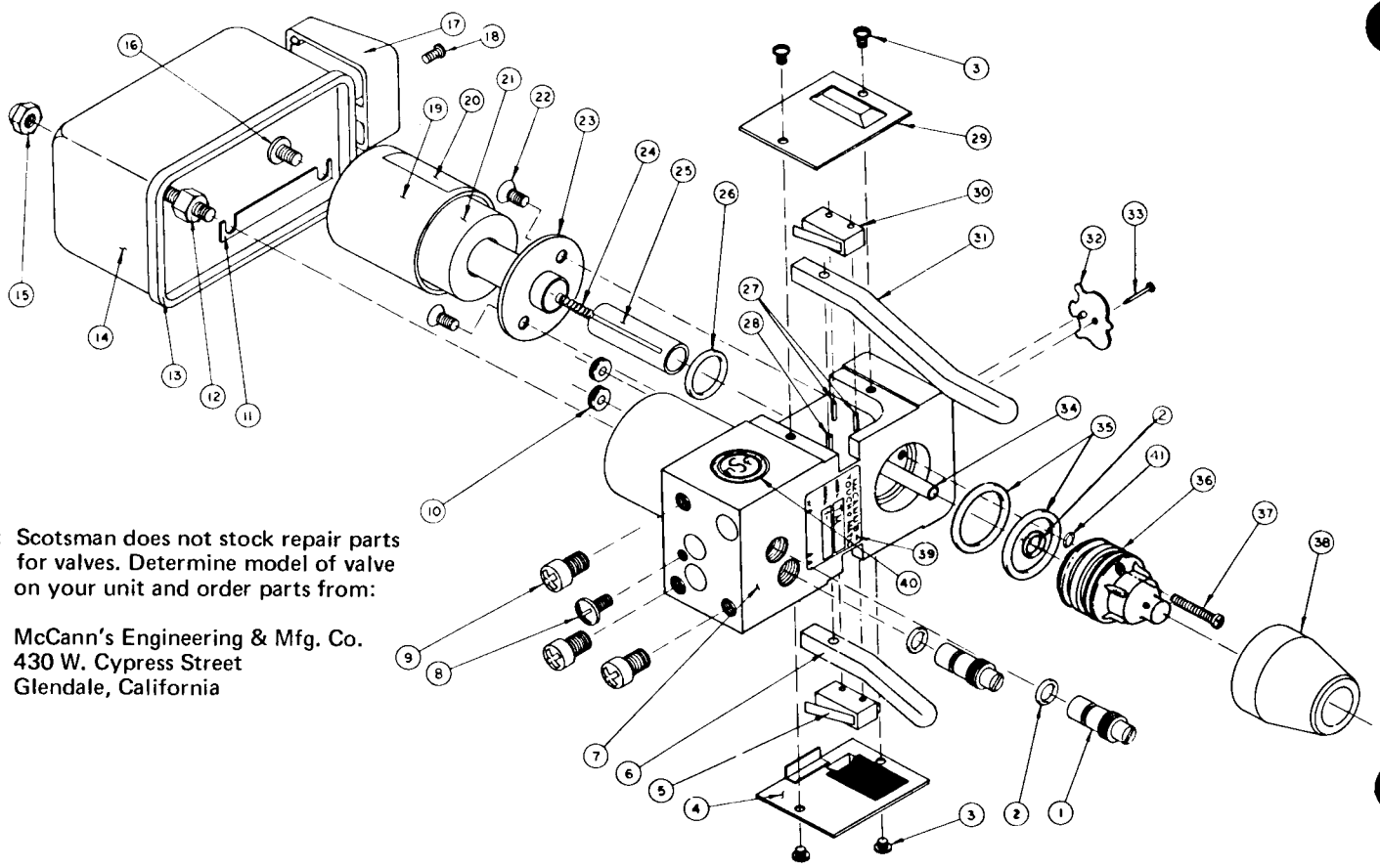
Item	part No.	Description
1.	2-1499	Tank Complete
2.	2-1499-6	Combination Electrode
3.	2-1499-3	Double Check Valve (water)
4.	2-1499-8	Washer
5.	2-1499-5	Relief Valve
6.	2-1499-7	Washer
7.	2-1499-4	Gas Inlet Check Valve
8.	2-1499-2	Outlet Tube – Carbonated WAter
9.	2-1499-1	Tank only.

CARBONATOR PUMP ASSEMBLY



Item	Part No.	Description
1.	12-1339-1	Motor 115/60/1
2.	2-1527	Coupling Clamp
3.	2-1526	Pump
4.	16-608	Brass Tee
5.	16-355	Union 3/8 NPT x 3/8 Flare
6.	16-162-1	Strainer
7.	16-401	Half Union Elbow
8.	16-588-1	St. Connector
9.	2-98-2	Nipple

TOUCH-O-MATIC FAUCET ASSEMBLY



NOTE: Scotsman does not stock repair parts for valves. Determine model of valve on your unit and order parts from:

McCann's Engineering & Mfg. Co.
430 W. Cypress Street
Glendale, California

Item	Part No.	Description	Item	Part No.	Description
1	1	Metering Stem	21	22	Coil (115 V. A. C.)
2	2	"O" Ring, Metering Stem	21	24	Coil (12 V. A. C.)
3	3	Screw, Side Plate	21	29	Coil (12 V. D. C.)
4	152	Side Plate (Right Side)	21	23	Coil (24 V. A. C.)
5	82	Switch Assembly (3 Wires)	22	31	Screw, Plunger Housing Retainer
6	160	Lever, short	23	32	Plunger Housing
7	01-0001	Block, 20-1000	24	38	Spring, Plunger
7	01-0002	Block, 20-2000	25	39	Plunger, Touch-O-Matic
7	01-0003	Block, 20-4000	26	40	"O" Ring Plunger Housing
7	01-0004	Block, 20-1100-20-4100	27	41	Roll Pin, Switch
7	01-0005	Block, 20-2100-20-3100	28	42	Roll Pin, Lever
8	5	Screw, Inlet Retainer	29	151	Side Plate (Left Side)
9	6	Screw, Faucet Mounting	30	137	Switch Assembly, 2 Wires, Standard
10	7	Grommet, Coil Housing	30	138	Switch Assembly, 2 Wires, Special
11	8	Grounding Strap	31	159	Lever, long
11	1508	Lockwasher in place of Part No. 8 on 12 V. D. C. and 20-4000	32	49	Crest, Mc CANN'S
			33	50	Pin, Crest Retainer
12	9	Stud, Cover Mounting short	34	09-0017	Tube, Syrup
13	10	Gasket Cover	34	89	Jet Tube
14	11	Cover (With Medallion Holes)	35	52	"O" Ring Diffuser
15	13	Nut, Cover Retainer	36	09-0018	Diffuser
16	14	Screw, Coil Housing	37	54	Screw, Di ffuser Retainer
17	15	Medallion (Specify Flavor)	38	09-0013	Pouring Spout, Red
18	16	Screw, Medallion Retainer	38	09-0015	Pouring Spout, Black
19	17	Coil Cover	38	09-0014	Pouring Spout, Clear
20	20	Label (Specify Voltage) Coil	39	149	Gasket

I. PRINCIPLE OF OPERATIONS

When the operator presses a glass against the main actuating lever of the faucet, this lever activates an electrical switch, causing the solenoid coil or coils to become energized and the plunger or plungers to be raised electromagnetically. The raising of these plungers allows the syrup and water, which are under pressure, to flow through their respective orifices and into the spout. In the spouts, the various liquids are completely mixed under ideal flow conditions to result in a homogeneous product having a minimum amount of foam. The block in which all of this action takes place is transparent to allow visual inspection of this operation, as well as to visually determine where any obstruction or problem might be.

II. METHOD OF SANITIZING OR CLEANING FAUCET

The faucet need not be dismantled in order to be cleansed. All that is required is simply fill a spare syrup tank with your cleaning agent, connect it to the syrup line to the desired faucet and flush it through facuet and syrup system with CO_2 pressure. A clean water rinse may be accomplished in the same manner.

Back flushing:

a. Release CO_2 pressure on syrup tank.
b. Disconnect syrup line at some convenient point and place line from faucet in a container.
c. Remove spout and replace it with back flush adapter.
d. Hold back flush adapter in place while energizing faucet allowing soda water to reverse flow through syrup side. NOTE: If the back flush adapter is not available, do not remove the spout and place hand palm side up on the spout creating a seal, a towel may be used. Then energize faucet.

The faucet spout should be removed and cleaned weekly.

III. POWER SOURCE

Our atandard Touch-O- Matic Faucet is supplied with 115 Volt A.C.- 60 Cycle coils. However, they can be supplied with various voltages. Naturally each faucet is clearly marked regarding its required voltage, the coil housing (8) is also marked accordingly. The coil itself is color coded to identify its voltage as follows:

RED LEADS indicate – 115 VAC – 60 Cycle
BLACK LEADS indicate – 12 VAC – 60 Cycle
YELLOW LEADS indicate – 12 VDC
BLUE LEADS indicate – 6 VDC

IV. METHOD OF DISMANTLING SOLENOID VALVE

Solenoid housing removal and replacement for repair or exchange.

a. Disconnect power source.
b. Turn off water supply for either water or soda solenoid removal.
c. Turn off CO_2 supply for either water or soda solenoid removal.
d. For soda solenoid removal only, bleed pressure from carbonator tank by SLOWLY opening the bleeder valve on top of carbonator tank.
e. For syrup solenoid removal only, bleed pressure from applicable syrup tank by SLOWLY opening the bleeder valve on top of syrup tank.
f. Remove chrome cover if applicable by unscrewing acorn nut counter-clockwise.
g. Remove solenoid cover by removing cover screw and pulling cover directly away from faucet block.
h. Lift solenoid coil up off of solenoid housing. NOTE: in the event there is not sufficient wire slack to allow the coil to come off the housing, then lift the coil high enough to allow removal of the two flat head phillip screws that hold the housing to the valve base block.
i. Remove both flat head phillip screws holding the housing to the valve base block.
j. Remove the solenoid housing by pulling the housing out of the block.
k. Remove the plunger and the spring from the solenoid housing. NOTE: Care should be exercised in the replacement of all fittings to guard against damaging "O" ring. For ease of installation, it has been found that wetting the "O" ring before installation reduces the danger of cutting the "O"ring.
l. Inspect the plunger, spring and seating area of the plunger in the faucet block. If the plunger seating area in the valve base is chipped or damaged in any way, the faucet block must be replaced. If the rubber seating area of the plunger is deformed, the plunger must be replaced. Inspect inside tubing of solenoid housing for any dirt or particles that could reduce the travel of the plunger. It is suggested that when no defects can be noted by visual inspection that a new plunger and spring be replaced and operation be rechecked. In most instances this will correct the problem.
m. For replacement of the solenoid housing, reverse procedures as outlined. NOTE: Before replacing plunger housing, depress plunger in housing and feel the spring action to insure that spring has been installed properly. CAUTION: BE SURE "O" RING HAS BEEN REPLACED AROUND HOUSING TUBE BELOW HOUSING MOUNTING PLATE BEFORE INSTALLATION

TOUCH-O-MATIC FAUCET ASSEMBLY

V. SERVICE TIPS

1. When the 2 screws (22) that fasten the plunger housing (23) to the plastic valve base (7) are replaced, they should be screwed down all the way. In other words, be sure that the large stainless washer on the plunger housing (23) is pressed firmly against the plastic. If one screw was all the way in and the other was only half way in (for example), the plunger in the housing might "cock" and cause dripping. Caution—these screws do not have to be extra tight, just snug down.

2. When reassembling solenoid, with plunger spring (24), place in plunger (25), allow the plunger housing (23) to be placed over the plunger and spring and held together, thus preventing the plunger spring from falling out while assembling.

3. There is a difference between the Touch-O- Matic Non-Carbonated (NC) and the Carbonated faucet. The Non-Carbonated faucets are marked NC on the underside of the faucet. The NC faucet is designed for plain water. Since this pressure could vary from 10 to 100 psi at various locations throughout the same city, we arrived at a medium flow of water. On this faucet, we use a 3/16" orifice which will pass a sufficient amount of water at 10 pai. This faucet can work on pressure up to 50 psi, but no higher or the plunger will fail to open occasionally.

The Carbonated faucet will operate on pressures up to 124 psi, by using a smaller 1/8" orifice.

4. RECOMMENDED OPERATING PRESSURES

10 to 20 psi on syrup – average 15 psi.
80 to 120 psi on carbonated water – average 100 psi.

5. RATE OF FLOW AND PROPER BLENDING

The fastest rate of flow recommended for the Touch-O-Matic Faucet is 2 ounces per second of finished drink. In other words, a 6 ounce finished drink should take at least 3 seconds to pour. If a faster pour is used, the carbonation in the drink would be reduced.

The typical blend used, is 1 ounce of syrup and 5 ounces of water for a finished 6 ounce drink. However, this may vary with the brand of syrup used, therefore check with your syrup supplier.

To increase flow of syrup or water, turn metering screw out (counter-clockwise) and inward (clockwise) to decrease flow. These adjustments are sensitive and should be treated as such, by not turning more than an eighth of a turn at a time.

SERVICE ANALYSIS
FAUCET SECTION

COMPLAINT	POSSIBLE CAUSE	CORRECTION
1. Syrup or water drips through spout.	Foreign matter on plunger seat.	Operate faucet sereral times to flush out Remove plunger from solenoid valve and clean valve port and plunger seat. Back flush valve. (See Servicing Note No.2)
	Nick or cut on plunger seat.	Remove plunger and replace.
	Broken or defective plunger Spring	Remove spring and replace.
2. Faucet continues to pour even when lever is not actuated.	Lever is sticking.	Clean syrup from lever and lubricate with vaseline.
	Electric switch defective.	Replace.
	Plunger Stuck.	Replace spring and/or clean solenoid housing. Back flush valve.
3. Noisy solenoid valve-	Dirt or particles in back of plunger	Operate faucet several times to flush out. Back flush. Remove and clean plunger and solenoid housing.
4. Actuation of lever results in no flow.	Defective switch	Replace.
	Bad solenoid coil and switch connection	Check and correct.
	Power off.	Check circuit and fuse and correct
	Low voltage.	Voltage at coil should be 100 volts on 115 VAC line. If volt-meter not available, turn off all lights and other electrically operated devices to check under best conditions at that location.

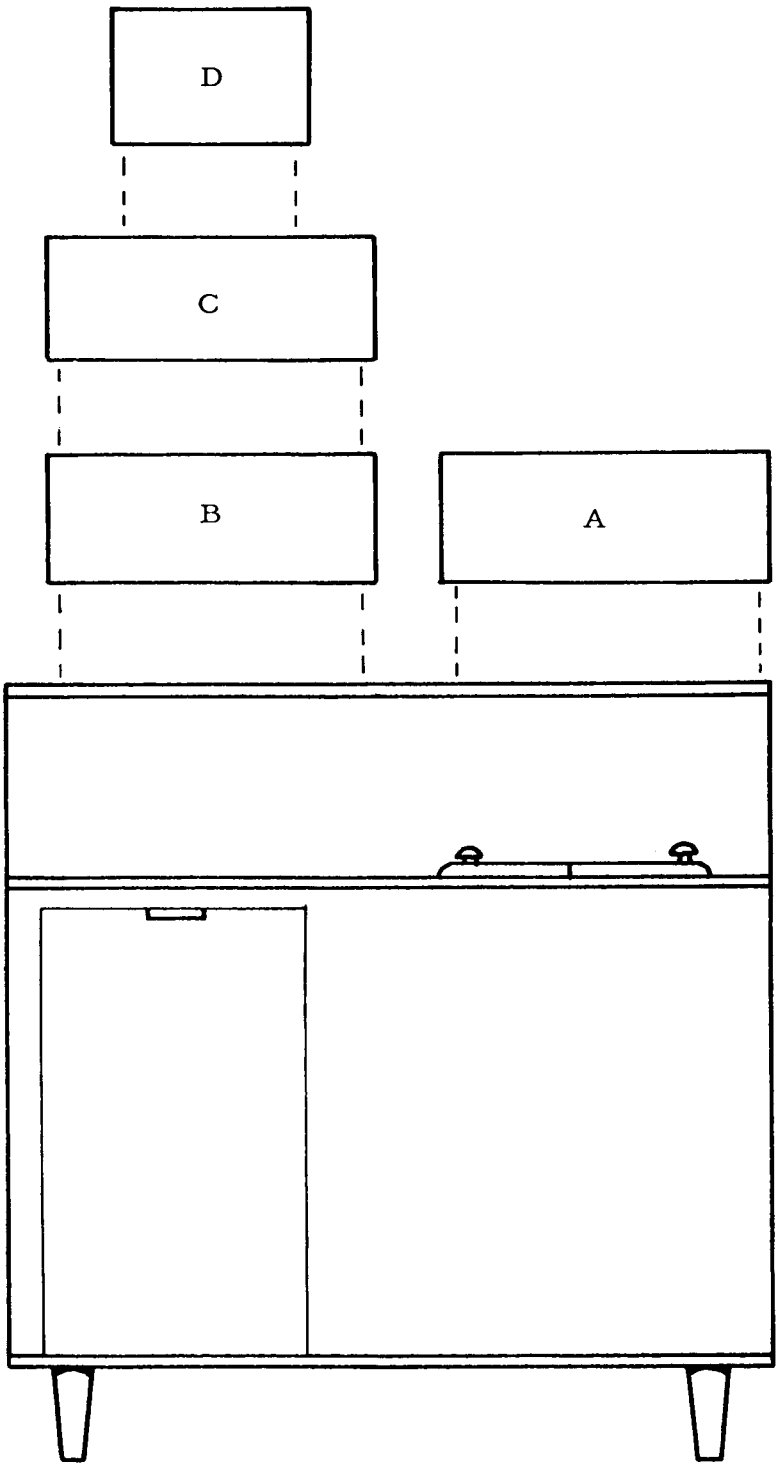
SERVICE ANALYSIS

FAUCET SECTION

COMPLAINT	POSSIBLE CAUSE	CORRECTION
5. Drink too sweet insuf-soda or water to syrup ratio (heavy drink)	Soda solenoid coil defective	Replace.
	Defective soda solenoid coil connection	Check and correct.
	A non-carbonated faucet may be in a high carbonated faucet application.	Replace with correct faucet
	Insufficient soda flow due to low carbonator pressure	Check CO_2 supply pressure and replace tank if CO_2 pressure is low and/or reset regulator as required.
	Obstruction in water and/or soda line.	Clean out line.
	Water shut-off valve partially closed.	Check and open freely.
	Syrup pressure too high.	Check and reset low pressure regulator.
6. Drink not sweet enough excessive soda or water to syrup ratio (light drink)	Syrup solenoid coil defective.	Replace.
	Defective syrup solenoid coil connection.	Check and correct. Replace
	Carbonator pressure too high	Check and correct.
	Obstruction in syrup line.	Check transparent block to see if there is any obvious obstruction.
		Back flush. (See Servicing Notes No. 2)
		Remove and clean syrup plunger and solenoid coil housing.
	Water pressure too high. Drink will also have low carbonation.	Add regulator in water inlet line.
7. Foaming of finished drink	Over carbonation of soda.	Reduce CO_2 pressure on carbonator.
	Carbonation of syrup.	Reduce CO_2 pressure on syrup. Some root beers will foam when their CO_2 pressures are above 15 psi.
		Larger sized syrup lines may be required for long runs.
	Dirty lines, valves, etc.	Backflush. (See Servicing Note No. 2)
		Remove and clean syrup plunger and solenoid coil housing.
	Supercooled ice in drink.	Use ice at approximately 32°F.
	Product temperature too high.	Product temperature must be below 42° F.
	Pressure too high.	Reduce CO_2 pressure to recommended setting.
8. Inconsistent brixing.	Dirty lines, valves, etc.	Backflush. (See Servicing Note No. 2)
		Remove and clean syrup plunger and solenoid coil housing.
	CO_2 supply low.	Renew CO_2 cylinder.
	Leak in CO_2 line.	Locate and correct.
	Leaking water check valve on carbonator tank.	See carbonator trouble shooting guide.
9. Insufficient carbonation.	See carbonator trouble shooting guide.	

NOTE: In new installations, objectional taste or odor, foaming and inconsistent brixing may be the result of contaminants such as oils or pipe sealing compounds, Thoroughly clean all lines prior to installing and back flush are required.

CONVERSION KIT
LOCATION - USAGE



A. Syrup Rail Kit
Part No. K-43R

B. Satellite Kit
Part No. K-42S

C. Electric Valve Kit
Part No. K-41E

D. GravityType Syrup
Dispensing Heads Not
Sold by SCOTSMAN .
Purchase from supplier.

NOTE:

CO_2 gas cylinders, syrup tanks and regulators are not part of the complete unit or the accessory kits.

Contact your SCOTSMAN Salesman for these items.

Suggested source:

EXCELLALL PRODUCTS DIV.
Bastian-Blessing Co.
4201 W. Peterson Ave.
Chicago, Illinois

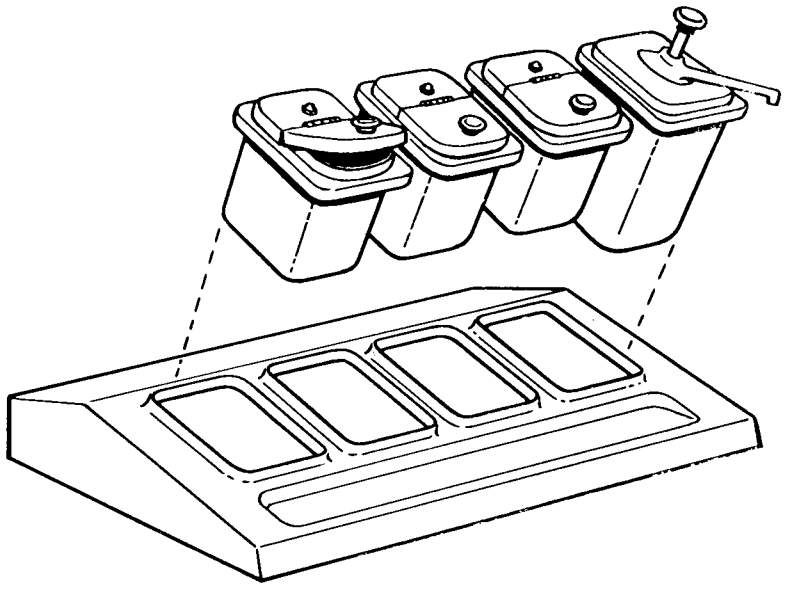


ILLUSTRATION A

K - 43R Syrup Rail Kit

Kit does not include syrup or fruit jars.

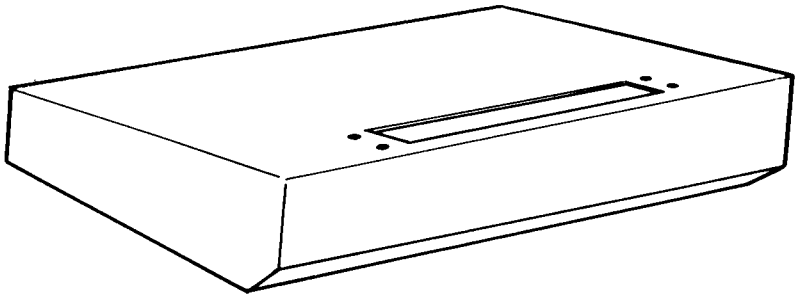


ILLUSTRATION B

K - 42S Satellite Kit

Kit does not include Satellite head.

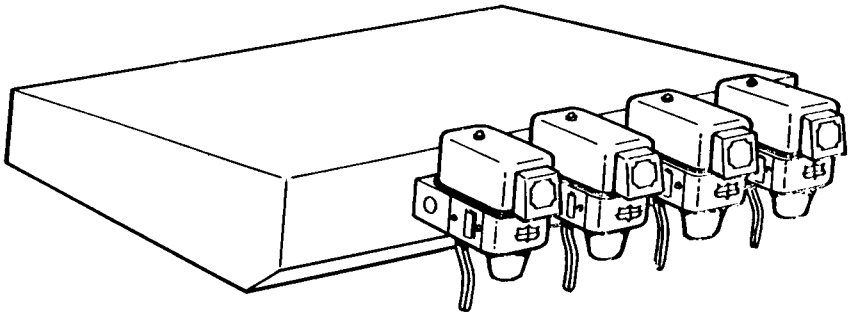
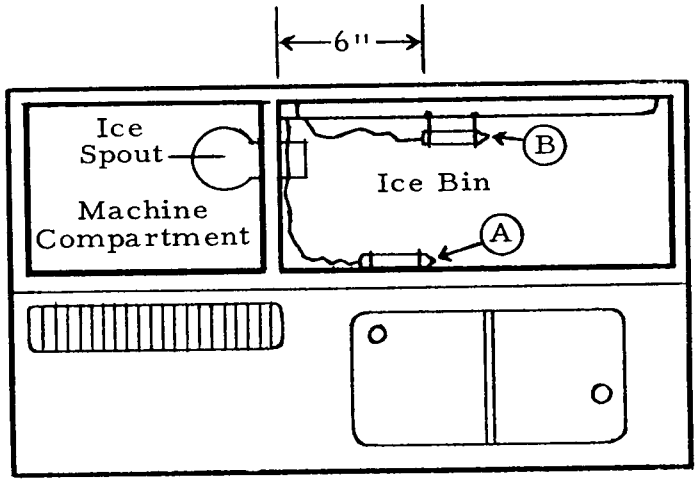


ILLUSTRATION C

K - 41E Electric Valve Kit

Kit comes complete with valves installed.



TOP VIEW OF SD1J

When installing topping tanks and K - 43R syrup rail, move thermostat from location A to location B. At location B bulb thermostat holder is clipped on to the tube cover panel. If thermostat is not moved the ice filling the bin will push the topping tank up before the bin thermostat stops ice machine.

CONVERSION KIT CONTENTS
Usage

A. Syrup Rail Kit

Part No. 43R

Mounts Right Hood Top
Illustration "A"

This kit contains a tapered stainless steel framework that replaces right hood top panel. Frame rail will hold four standard size syrup or crushed fruit jars. The jars are not included in this kit and must be purchased seperately. Because of the location of the ice spout, the first two jars on the left as you face the unit must not exceed a depth of 6-1/2" from rail top.

B. Satellite Ki t
Part No. K 42S

Mounts Left Hood Top
Il lustration "B"

This kit contains a stainless steel mounting station for use with Satellite head that replaces present left hood top panel. Kit also contains adaptor hardware and product lines. Kit does not include Satellite head, must bepurchased seperately.

C. Electric Valve Kit

Part No. K 41E

Mounts Left Hood Top
Illustration "C"

This kit contains a stainless steel mounting station that replaces present left hood top panel. Mounting station is pre-drilled to accept four (4) McCann electrically operated syrup dispensing valves. Supplied in kit are (2) two single lever carbonated valves, one (1), two lever carbonated valve and one (1) two lever sweet water valve.

All necessary product lines, fittings, etc. are also supplied in this kit.

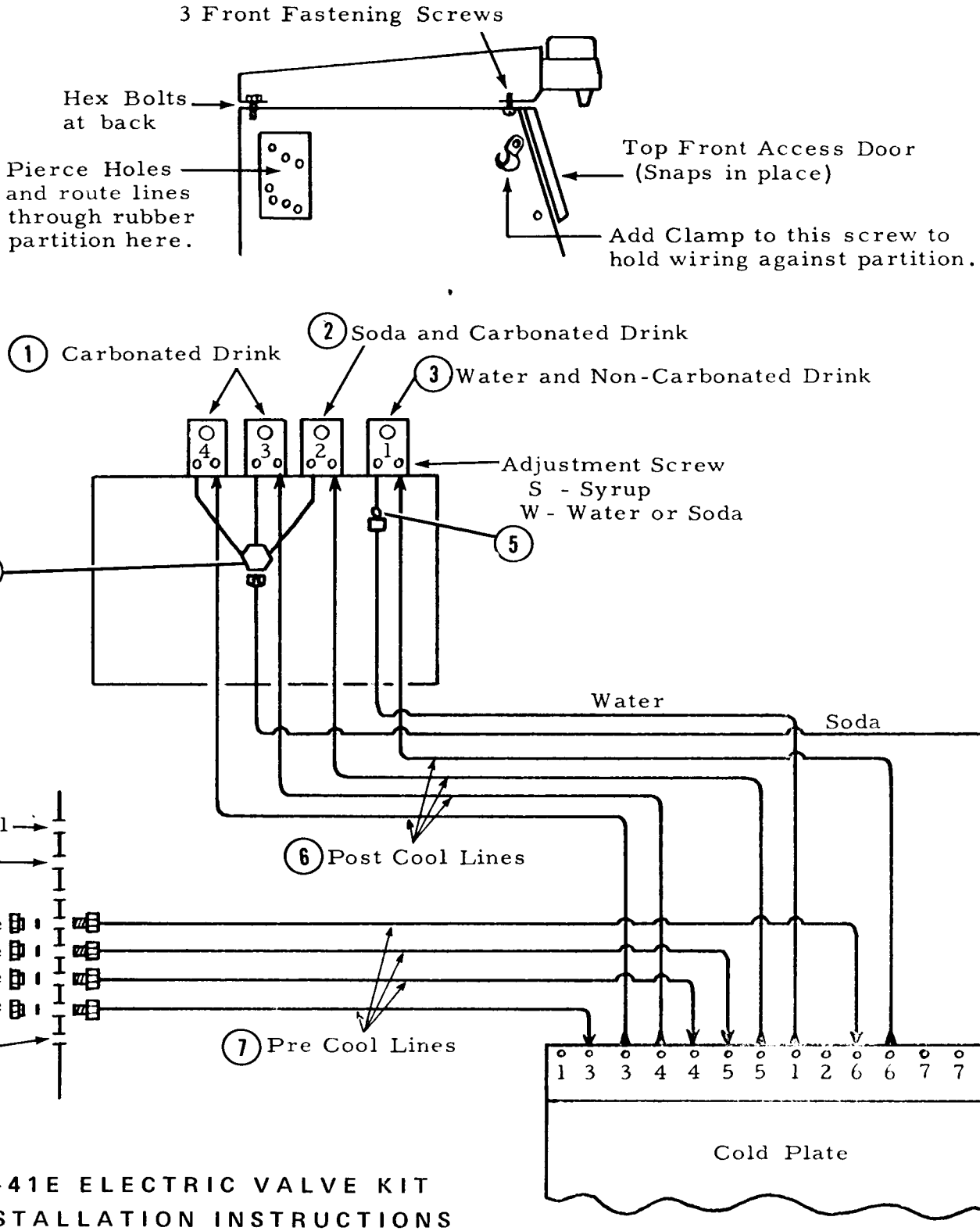
D. Represents anyone of numerous manufacturer's gravity type, post-mix syrup dispensing heads that can be adopted to this unit.

Because of the large variety of dispensing heads available, Scotsman does not attempt to make a conversion bracket for each one. However, the left side stainless steel top panel, utilizing the stiffness channels packed in bin. can be used to support the particular dispensing heao being used. Drill mounting, drain holes through this panel and secure to the underside using stiffness channels. Scotsman does not sell dispensing heads, order from supplier. Suggest when ordering gravity type dispensing heads that you specify one valve to have a split lever whereby cold water can be drained through head. There is no water station provided on complete unit although there is a flexible sweet water line provided.

E. K 41E Electric Valve Kit

Item No.	Part No.	Description
1.	2-1205	Valve, Single Lever, Carbonated Flavor
2.	2-1205-1	Valve, Two Levers, Carbonated Flavor & Soda
3.	2-1205-3	Valve, Two Lever, Non-Carbonated Flavor & Plain Water
4.	A-18282	Carbonated Water Manifold Ass'y
5.	A-18285	Plain Water Tube Ass'y
6.	A-17728	Syrup Line, Post Cool
7.	A-17730	Syrup Line, Pre Cool
	2-1249	Nylon Washer
	2-1204	"O" Ring

* Shown on next page



K-41E ELECTRIC VALVE KIT
INSTALLATION INSTRUCTIONS

INSTALLATION INSTRUCTIONS
K41E ELECTRIC VALVE KIT

1. Unpack carton and check material list to insure all parts of list are included.

2. Remove icemaker top front access panel.

3. Remove both top panels by removing the 3 sheet metal screws from underside of front hood brace. Loosen 2 hex bolts at back lip and slide panel back and off.

4. Remove stainless steel syrup line protector panel from storage bin back wall. Held in place by open slots. Pull straight up and out.

5. Now take the four syrup pre-cool lines, Part A-17730 from kit, also needed will be four each fibre washers 3-579, and S-7044 nuts to secure male end of lines to rear cabinet bulk head. Remove rear service door and connect four lines putting male end through from inside cabinet bulkhead and securing to outside with first a fibre washer then the S-7044 back nut. See installation sketch, attach to proper circuit numbers on cold plate, run lines through sponge rubber opening next to ice delivery spout. Attach female ends of lines to plate using small plastic washer on each connection.

6. Now set valve kit assembly on top of unit to facilitate connections of lines to kit and through sponge rubber opening between machine compartment and line.

   a. Connect flexible soda water line to 3 way manifold on underside of valve kit. Soda line is capped off on end lying in machine compartment – other end is already attached to cold plate No.2. See sketch.

   b. Flexible cold sweet water line is alo capped off on end lying in machine compartment. Fasten to single sweet water valve connection on underside of valve kit per sketch. Other end is already connected to cold plate on center connection No. 1.

7. Run four syrup post-cool lines from valve kit through sponge rubber opening next to spout and attach to proper circuit on cold plate per sketch. Use plastic washers supplied on cold plate connections.

8. Run electric valve kit wiring through plastic clamp as shown, into control box and fasten to upper terminal strip per wiring diagram on control box cover.

9. Connect CO_2 pressure (30 lb.) to all connections made, check for leaks with bubble soap.

10. Replace stainless steel syrup line protector panel on rear bin wall.

11. Install right side hood top panel and secure, also secure valve kit assembly to hood brackets.

12. Check operation of complete unit, replace all service doors, panels.

ELECTRONIC OR SATELLITE KITS

Install the conversion kit package or packages user requires per instruction given in this manual and packed in kit. After all connections are made within unit cabnitery, install the remote syrup tanks, lines and the CO_2 gas cylinder, hi and lo pressure gauges with lines leading to cabinet connections.

Make sure CO_2 regulators are in a normally closed or zero reading position before opening CO_2 cylinder valve.

Slowly open CO_2 cylinder valve and adjust high pressure gauge feeding carbonator tank to a value of 85 – 100 lb gauge. Next adjust lo pressure regulator feeding remote syrup tanks to a value of 20 – 25 lb. gauge reading. NOTE: Lo pressure system is used to force syrups from remote tanks through product lines, cold plate and up to dispensing valve. Most syrup tank manufacturers do not recommend CO_2 pressures in excess of 30 lb. gauge therfore be sure and follow that particular manufacturers instructions on proper application.

Check for leaks at connections made from regulators up to back of dispensing valves with bubble soap. Repair any leaks found.

Shut off hand valve at CO_2 tank and bleed all pressure out of system.

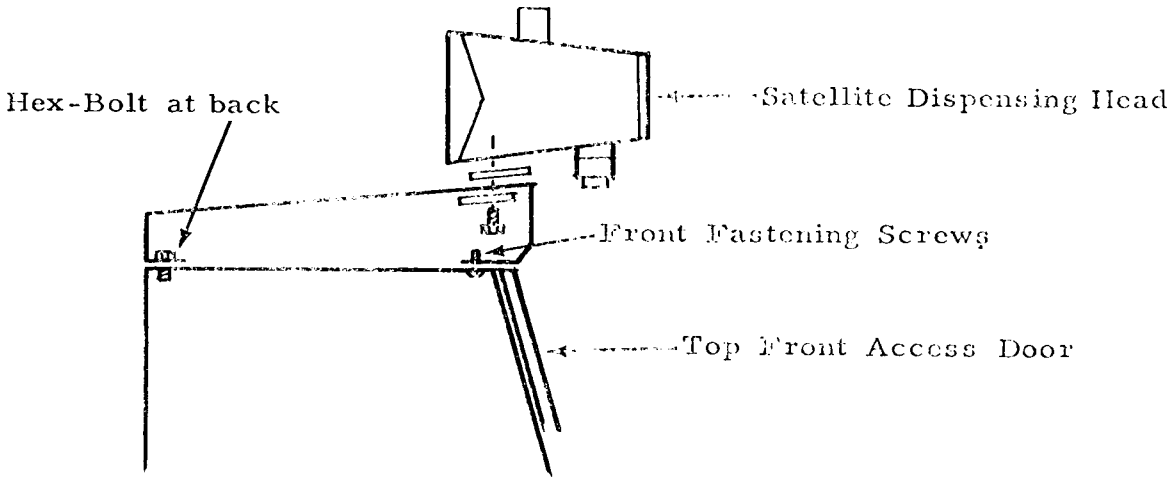
Fill syrup tanks half full of clean water, replace tank covers and open CO_2 valve. Open water supply valve feeding complete unit, then turn on the carbonator switch in unit control box.

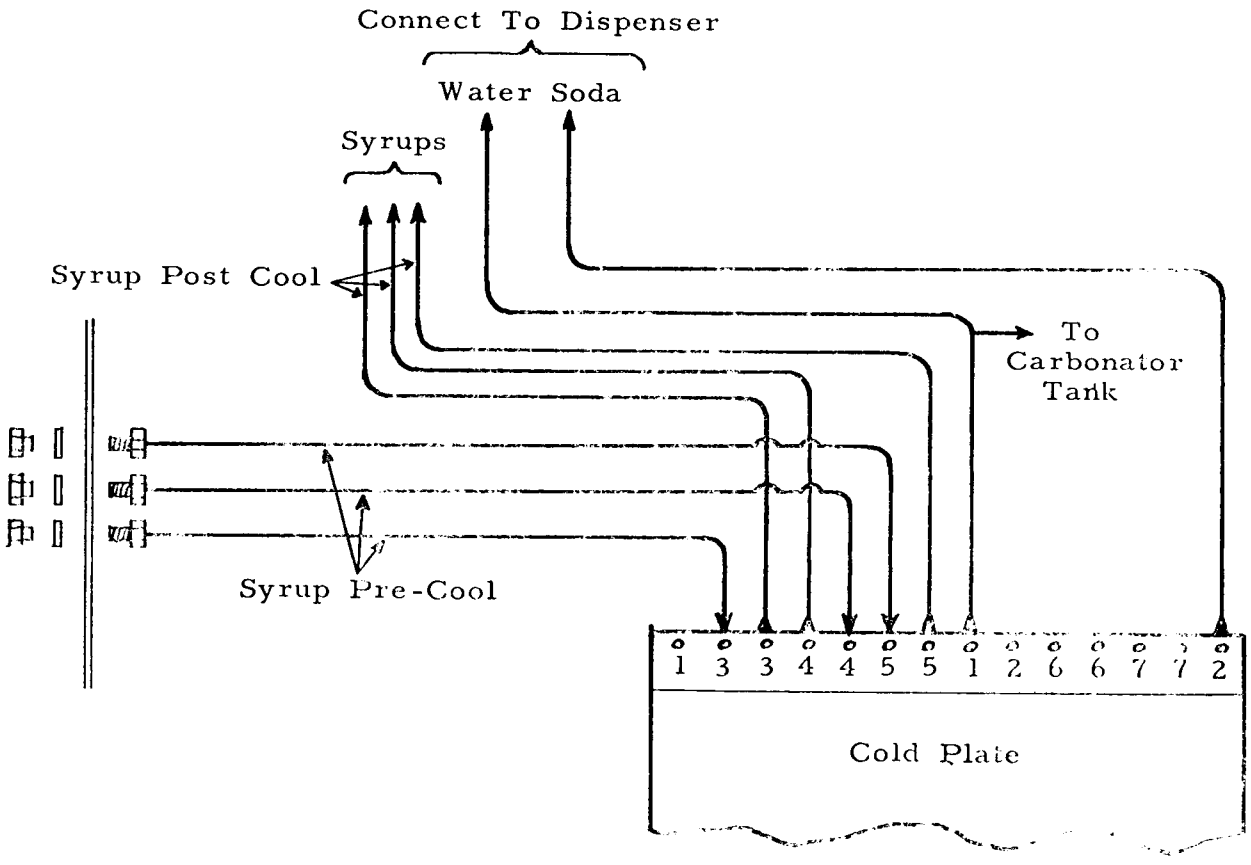
Now actuate dispensing valves and draw the clean water from syrup tanks through valves. Hold in carbonated water lever. Check to make sure the carbonator pump cycles correctly.

After flushing system, shut off CO_2 cylinder, carbonator switch and bleed off pressure. Dump any water left in syrup tanks.

Fill tanks with syrups of user's choice, replace covers, and open CO_2 cylinder valve.

Turn on both carbonator and ice make switches. Actuate each dispensing valve until a full flow of syrup comes thru valves. Do not attempt to adjust dispensing valves until cold plate is completely covered with ice, then make adjustments as required.





K-42S SATELLITE KIT

INSTALLATION INSTRUCTIONS

PARTS LIST SD-1J

CABINET PARTS

Description	Part No.
Rear Service Door	A-17754
Rear Panel-Case	A-17753
Left Top Panel-Hood	A-17829
Drip Grill	2-1553
Right Top Panel-Hood	A-17812
Ice Bin Door	2-1550
Hood Assy-less Panels	A-17616
Right Panel-Case	A-17749
Scotsman Emblem	15-156-1
Front Panel-Hood	A-22280
Front Panel-Case	A-17766
Front Service Door	A-17615
Leg	A-15803-1
Leg Leveler	8-522-1
Left Panel-Case	A-19156

CARBONATOR PUMP ASSY

Motor 115/60/1	12-1339-1
Coupling Clamp	2-1527
Carbonator Pump	2-1526
Brass Tee	16-608
Half Union Elbow	16-401

FREEZER ASSY

Freezer Complete	A-20713-1
Snap Ring	3-553
Worm Shaft Cap	A-7701
Cap Screw	3-758
Worm Tube Washer	A7699
Bearing (Matched Set)	2-1412
"O" Ring	13-617-16
Ice Breaker	A-14591
Worm Shaft	2-1538
Worm Tube, Acc., Suction Line	A-20712
Washer	3-1410-3
Spout Casting, Rear	A-18430
Spout Casting, Front	A-14254
Bolts	3-1403-48
Water Seal	2-1300
Lower Bearing	2-417
Drip Pan	A-18153
Breaker & Bearing Assy	A-14678
Adapter	2-1914
Spline Drive Coupling	2-1913

CONDENSING UNIT

Description		Part No.
Condensor W. C.		18-368
Hi-Pressure Control		11-357
Low Pressure Control		11-358
Compressor 115/60/1	W.C.	18-2210
Compressor 115/60/1	A.C.	18-2210
Klixon		18-2200-26
Starting Capacitor		18-2200-29
Relay		18-2200-25
Water Valve		11-198
Fan Blade		18-285
Fan Motor		12-1575-1
Condensor	A.C.	18-234
Condensor Shroud		A-18229
Fan Motor Bracket		18-422

CO_2 AND WATER CIRCUIT

Flexible Line	A-17737
Water Line	A-17718
Soda Line	A-17743
Soda Line	A-17743-1
CO_2 Line	A-17732
Storage Bin	A-21645
Cold Plate Assembly	A-18028
Liquid Level Control	11-373-1 or 11-368-1
Carbonator Tank	2-1916
Electrode	2-1916-7
Gas Check Valve	2-1916-5
Washer (check valve-water)	2-1916-2
Relief Valve	2-1916-3
Washer (Electrode)	2-1916-2
Double Check Valve	2-1916-4
Outlet Tube-Carbonated Water Tank only	2-1916-1

RESERVOIR ASSY

Reservoir Cover	2-1793-3
Inlet Valve Assy	2-1793-2
Reservoir Body	2-1793-4
Bracket Nut	2-1793-5
Reservoir Assembly	A-22348